Ladder Program Converter

Operation Manual

Rev: V1.20

CONTENTS

1. About Ladder Program Converter....8
2. Operation Environment....8
   2.1. OS Object Operation System....8
   2.2. Object PLC Series....8
3. Installation and uninstall....9
   3.1. Installation....9
   3.2. Uninstall....9
4. Notice about the conversion....10
   4.1. Notice of the Copy-Paste Conversion Method....10
   4.2. Conversion limition....10
5. Copy-Paste Conversion Method in CX-P....12
   5.1. Copy Program from GX-Developer of Mitsubishi....12
   5.2. Copy Program from STEP 7 MicroWIN of Siemens....18
   5.3. Conversion List File....25
6. ERROR List and Solutions....27
7. Appendix....28
   7.1. Instruction Convert list....28

Introduction

This manual contains information required to use the Ladder Program Converter.

Please refer to the user's manual of PLC unit while you use Ladder Program Converter.

Intended Audience

This manual is intended for the following personnel, who must also have knowledge of electrical systems (an electrical engineer or the equivalent).

- Personnel in charge of installing FA systems.
- Personnel in charge of designing FA systems.
- Personnel in charge of managing FA systems and facilities.

Note

This manual contains information required to use the Ladder Program Converter.

Read this manual completely and be sure you understand the contents before attempting to use the Ladder Program Converter.

Pease keep the manual and always keep it at hand after reading.

Read and Understand this Manual

1. WARRANTY

This software is used to convert the instructions of FX3/2/1N/1S series made by Mitsubishi Electric Corporation and S7-200 series made by Siemens to OMRON instructions according to the conversion rules as much as possible.

OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, REGARDING NONINFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR PARTICULAR PURPOSE OF THE PRODUCTS.

After conversion operation, the Programmable Logic Controller is responsible for the operation of CX-Programmer. Please refer to the programmable manual of our company.

Related Manuals

CP1H CPU Unit Operation Manual (Cat. No.W450)
CP1L CPU Unit Operation Manual (Cat. No.W462)
CP1E CPU Unit Hardware User's Manual (Cat. No. W479)
CP1E CPU Unit Software User's Manual (Cat. No. W480)

2. LIMITATIONS OF LIABILITY

OMRON SHALL NOT BE RESPONSIBLE FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED ON CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY.

3. SUITABILITY FOR USE

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of products in the customer's application or use of the products.

At the customer's request, OMRON will provide applicable third party certification documents identifying ratings and limitations of use that apply to the products. This information by itself is not sufficient for a complete determination of the suitability of the products in combination with the end product, machine, system, or other application or use.

The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses listed may be suitable for the products:

- Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this manual.
- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
- Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCTS ARE PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

4. CHANGE IN SPECIFICATIONS

Product specifications and accessories may be changed at any time based on improvements and other reasons.

Requirement of configuration

Environment of the converter can be installed

	Microsoft Windows 2000 Service Pack2 or higher	Microsoft Windows XP	Microsoft Windows Vista（32bit version）
CPU	Pentium series CPU 150MHz or better CPU Pentium III 1GHz or better central processors	Pentium series CPU 300MHz or better CPU Pentium III 1GHz or better central processors	Microsoft recommended configuration（1GHz or better CPU）
Memory（RAM）	256MB or more	384MB or more	Must be 512MB or more 1GB or more is better
Hard drive space	50MB of free	50MB of free	50MB of free

Trademarks

Windows is a registered trademark of Microsoft Corporation.

Other system names and product names in this document are the trademarks or registered trademarks of their respective companies.

Safety Precautions

Definition of Precautionary Information

The following notation is used in this manual to provide precautions required to ensure safe usage of Ladder Program Converter, CX-Programmer and Programmable Logic Controller (PLC). The safety precautions that are provided are extremely important to safety. Always read and heed the information provided in all safety precautions.

⚠ WARNING	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. Additionally, there may be severe property damage.
⚠ Caution	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury, or property damage.

Precautions for Safe Use

Indicates precautions on what to do and what not to do to ensure using the product safely.

Precautions for Correct Use

Indicates precautions on what to do and what not to do to ensure proper operation and performance.

Additional Information

Additional information to increase understanding or make operation easier.

Symbols

The triangle symbol indicates precautions (including warnings). The specific operation is shown in the triangle and explained in text. This example indicates a precaution for electric shock.

The circle and slash symbol indicates operations that you must not do. The specific operation is shown in the circle and explained in text.

The filled circle symbol indicates operations that you must do. The specific operation is shown in the circle and explained in text. This example shows a general precaution for something that you must do.

The triangle symbol indicates precautions (including warnings). The specific operation is shown in the triangle and explained in text. This example indicates a general precaution.

The triangle symbol indicates precautions (including warnings). The specific operation is shown in the triangle and explained in text. This example indicates a precaution for hot surfaces.

⚠ WARNING

This tool is just used to convert the instructions of Mitsubishi and Siemens to instructions of OMRON according to the conversion rules as much as possible. Because the ladder program can not be converted completely, it is necessary to modify the instructions and memory area which have not been converted. The operation of the made ladder program must be confirmed enough before carrying out a formal operational.
System operation may be abnormal without confirmation.

The I/O memory convert specification is made before instruction conversion. If you want to add program after conversion, it is necessary to confirm there is no repetition of I/O memory.
System operation may be abnormal without confirmation.

1. About Ladder Program Converter

This tool is used to convert the instructions of Mitsubishi and Siemens to instructions of OMRON according to the conversion rules.

2. Operation Environment

2.1. Operation System

Ladder Program Converter can only run in Microsoft Windows 2000 (Service Pack2 or higher）、Microsoft Windows XP、Microsoft Windows Vista（32bit version）.

2.2. Object PLC Series

PLC type of Conversion Source includes FX3/2/1N/1S of Mitsubishi as well as S7-200 series of Siemens. OMRON PLC type of Conversion Destination is CP1H/CP1L/CP1E.

3. Installation and uninstall

3.1. Installation

The install steps are as follows:

(1) Uninstall the previous version of Ladder Program Converter before installing the new version. Please refer to the section 3.2 for details of the method of uninstall.

(2) Copy the install files of Ladder Program Converter to object folder specified by users.

(3) Run “setup.exe” in the install files.

(4) Install Ladder Program Converter according to the installation prompts.

Note:

When installing CX-Programmer 9.0, the converter tool “Ladder Program Converter v1.1” will be installed at the same time. For the new version with “Ladder Program Converter v1.2”, please refer to the above install step (2) – (4).

3.2. Uninstall

Please perform the Uninstall of Ladder Program Converter through the *Add/Remove Programs*.

Select ***Start -Setting - Control Panel - Add/Remove Programs***.

Select *Ladder Program Converter* from the dialogue box.

Click the ***Remove*** Button.

And then finish uninstall under the instruction of *install-shield wizard*.

Note:

(1) Please don’t delete the folder where Ladder Program Converter is installed directly, otherwise the operation of reinstall and uninstall can’t carry out correctly.

(2) If the converter tool is installed (updated) in the CX-Programmer 9.0, it can’t be uninstalled without CX-Programmer 9.0. When uninstalling CX-Programmer 9.0, the converter tool will be uninstalled at the same time.

4. Notice about the conversion

4.1. Notice of the Copy-Paste Conversion Method

(1) Setting FX3/2/1N/1S series of Mitsubishi as the copy source has been tested. The program of other series PLC could not be identified.

(2) In Omron CX-P, paste can be performed in the Diagram view and Mnemonic view of Section.

(3) The UNDEFINST will be output when Instruction of Mitsubishi can not be identified. The UNDEFOPER will be output to substitute for the operand of Mitsubishi which can not be identified.

(4) When the Source instruction can not been converted to the OMRON instruction, a “Mi_” will be added before the Mitsubishi instruction and a “Si_” will be added before the Siemens instruction as the conversion result in the CXT file.

(5) That copy from Siemens program should start with Network 1 and the minimum copy unit is one Network otherwise some programs will lost.

(6) Because the Channel length of Siemens is different from that of MONRON, Siemens channel length is 8 bits, while OMRON channel length is16 bits, the Error will occur during the conversion. Please pay more attention to it.

4.2. Conversion Limition

(1) About Siemens Instructions:

Problem	Detail
OB Series can not be converted	Converting will break the LD’s structure, so it can not be converted.
TON	Because of the different Resolution, the Tim Number will change after converted.
TONR function is changed after being converted	When set value is arrived, OMRON TIM will stop and Siemens TIM will continue
DIV	It occur address across problem after converted.
SBR/CALL	It’s a subroutine instruction. In Siemens, SBR/CALL is used to jump to the subroutine section directly, the section number is regarded as the sign. In OMRON, it jumps from SBS to SBN, SBN is regarded as the sign.
Float can not be converted directly	The OMRON PLC doesn’t support float constant, so it can not be converted.
Flag SM1.1 can not be converted	The Flag SM1.1of Siemens needs the special Flags (P_CY, P_OF and P_UF) of OMRON to correspond.

(2) About Mitsubishi Instructions:

Problem	Detail
Mitsubishi area X,Y →Omron area CIO	Each point of Mitsubishi area X,Y corresponds a physical I/O. Not every point of Omron area CIO corresponds a physical I/O.
Mitsubishi area C200~C255→ Omron area C200~C255	The area C200~C255 of Mitsubishi is 32 bits length; The area C200~C255 of Omron is 16 bits length.
The marker bit and the structure of arithmetic is difference.	When data is beyond max. range in Mitsubishi, the result is recalculated from 0. The carry flag is active; When data is less than min. range in Mitsubishi, the result is recalculated from 0. The borrow flag is active. The flag couldn't reset until changing next time. Ex.when the operand is 16 bit length,, 32767+1=0;-32768-1=0 The carry and borrow flag is the same flag (CF) in Omron. It's the difference with that in Mitsubishi. CF is active when data changes from plus to negative or from negative to plus. When data is beyond max. range in Omron, the data is cycle operation.The overflow flag is active. When data is less than min. range in Omron, the data is cycle operation. The underflow flag is active. The flag will reset next cycle. Ex.when the operand is 16 bit length, 32767+1=-32768;-32768-1=32767
The pulse instruction of Mitsubishi is difference with that of Omron	Mitsubishi P instruction will execute one time after contact M8000. Omron @ instruction won't execute after cotact P_on.
Sequence Control Instructions and SUBROUTINE instructions will no function after being converted	Mitsubishi's sequence control logo can't be converted.So Function can not be achieved.
WDT function is changed after being converted	In Mitsubishi PLC, program can be divided into a shorter period of time, through WDT (watchdog timer) monitor the cycle time;
EI/DI function is changed after being converted	The Mitsubishi PLC default disable interrupts, The Omron PLC default ensable interrupts.
The function of ASCII code instructions is difference after being converted	To ASC instructions, if the string of first operand contains symbol ',', then the characters after this symbol will be abandoned.If this string contains two or more symbols ',', then the second operand will be abandoned too.

5. Copy-Paste Conversion Method in CX-P

The Ladder Program Converter supports copying the program from the conversion source software (Mitsubishi GX-Developer, Siemens STEP 7 MicroWIN) directly and pasting to the CX-Programmer 9.0，CX-Programmer for CP1E 1.00 or higher Version.

5.1. Copy Program from GX-Developer of Mitsubishi

Only Fx3/2/1N/1S series PLC of Mitsubishi supports the direct-copy method. The integrity of program reading can not be guaranteed when the method are used to other series PLC.

(1) Open the source program in GX-Developer.

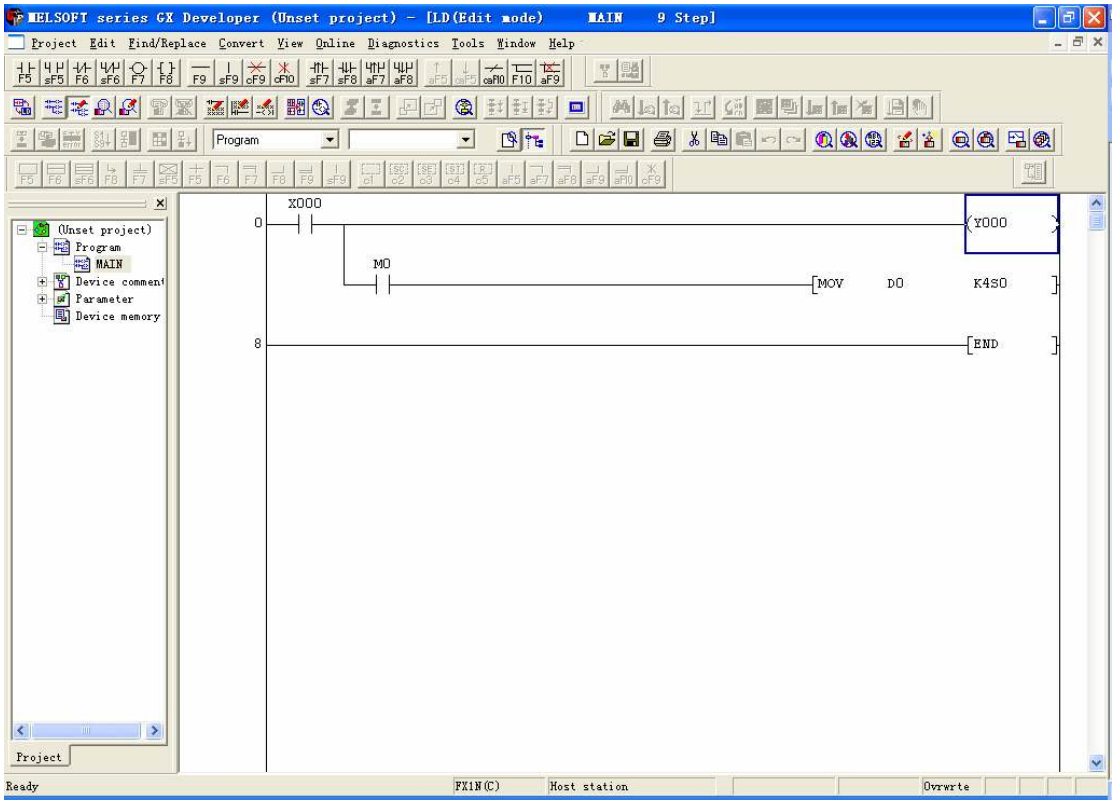


Fig.5-1 Mitsubishi GX-Developer

(2) Click , enter the mnemonic list window.

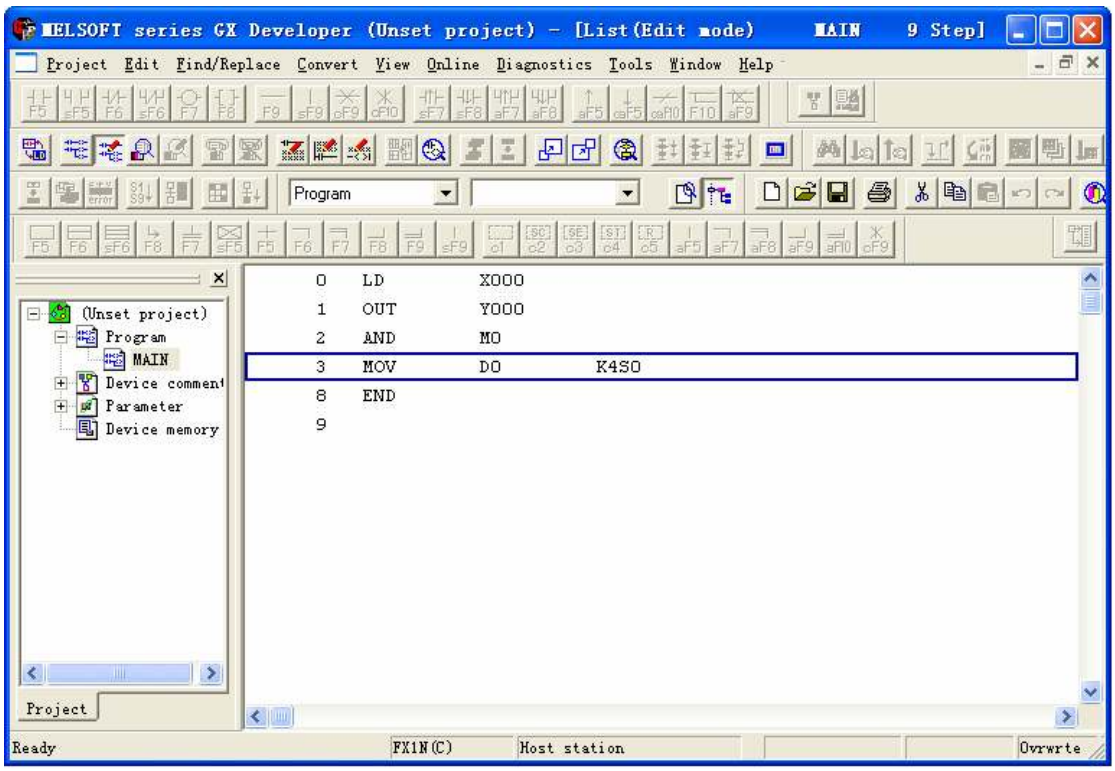


Fig.5-2 Mitsubishi instruction list View

(3) Select the Program needed to be converted and copy it.

(4) Start up CX-Programmer and create a new project.

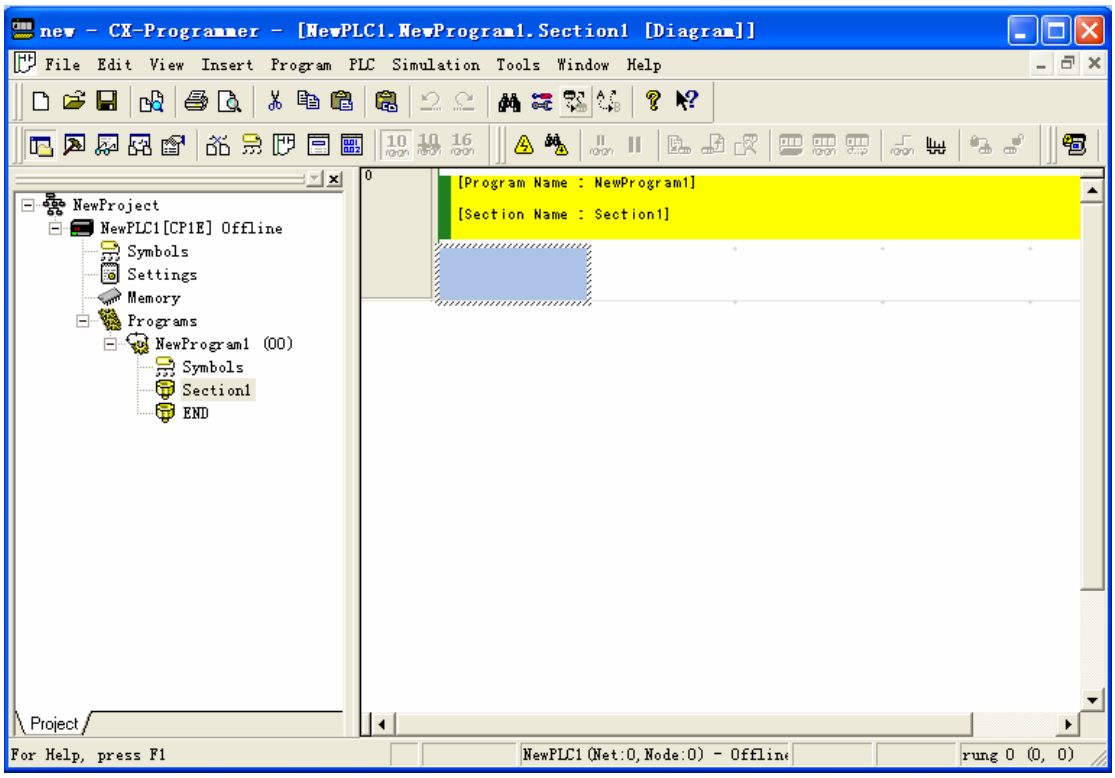


Fig.5-3 OMRON CX-Programmer View

(5) Paste the source program in the Diagram view or Mnemonics view. And the following dialogue box will be displayed.

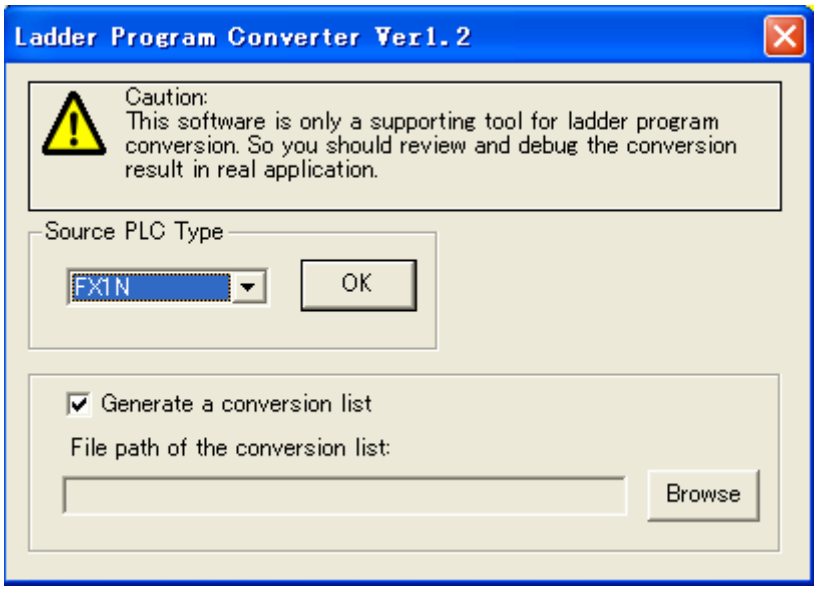

Ladder Program Converter Ver1.2
Caution:
This software is only a supporting tool for ladder program conversion. So you should review and debug the conversion result in real application.
Source PLC Type
FX1N
OK
Generate a conversion list
File path of the conversion list:
Browse

Fig. 5-4 Ladder Conversion Dialogue box

(6) Click the ***Browse*** Button; designate the name and path of conversion list file.(Fig.5-5)

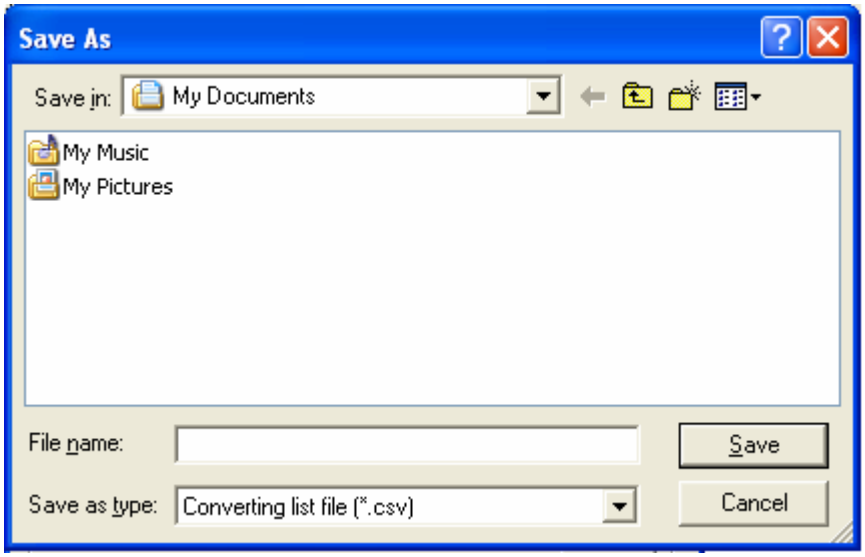


Fig. 5-5 Conversion list file saving dialogue box

(7) Select the conversion source PLC type. Click the ***OK*** Button and the Converting progress bar will be displayed.

Fig. 5-6Converting progress bar

(8) The converted program will be displayed in the CX-Programmer.

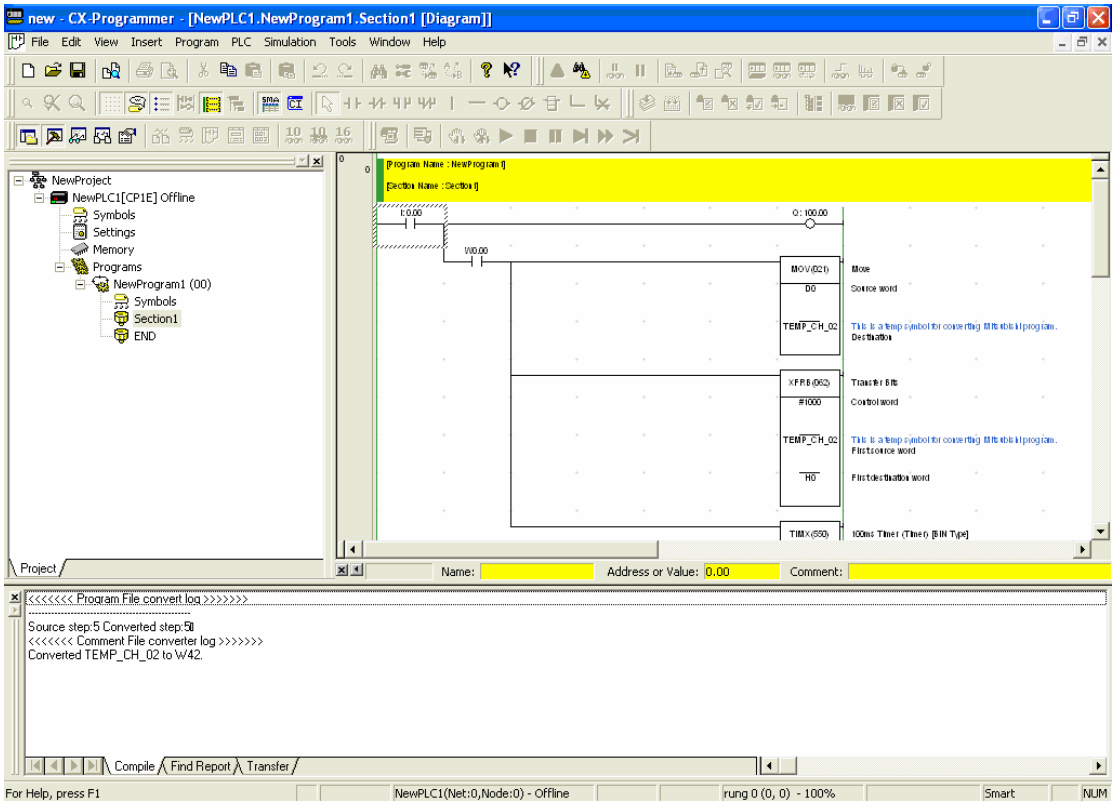


Fig.5-7 the result of conservation

(9) Insert the temporary variable created during the conversion into the global variable table.

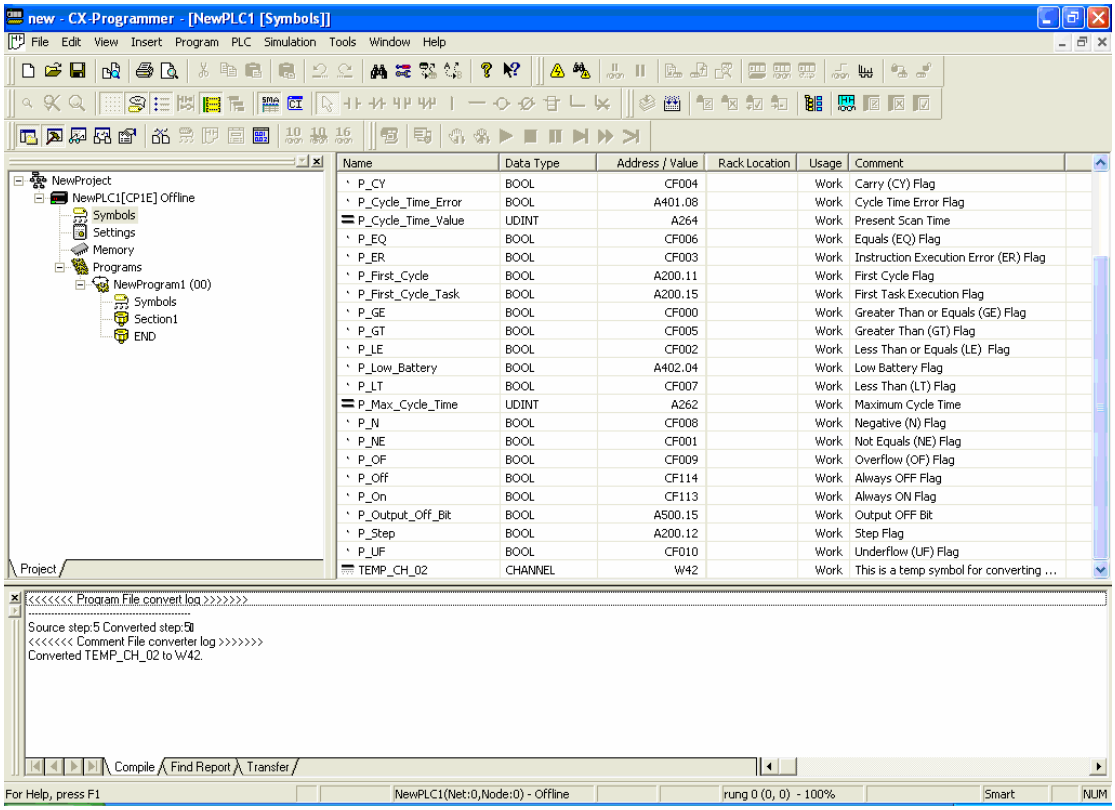

new - CX-Programmer - [NewPLC1 [Symbols]]
File Edit View Insert Program PLC Simulation Tools Window Help
NewProject
NewPLC1[CP1E] Offline
Symbols
Settings
Memory
Programs
NewProgram1 (00)
Symbols
Section1
END
Project
Name Data Type Address / Value Rack Location Usage Comment
P_CY BOOL CF004 Work Carry (CY) Flag
P_Cycle_Time_Error BOOL A401.08 Work Cycle Time Error Flag
P_Cycle_Time_Value UDINT A264 Work Present Scan Time
P_EQ BOOL CF006 Work Equals (EQ) Flag
P_ER BOOL CF003 Work Instruction Execution Error (ER) Flag
P_First_Cycle BOOL A200.11 Work First Cycle Flag
P_First_Cycle_Task BOOL A200.15 Work First Task Execution Flag
P_GE BOOL CF000 Work Greater Than or Equals (GE) Flag
P_GT BOOL CF005 Work Greater Than (GT) Flag
P_LE BOOL CF002 Work Less Than or Equals (LE) Flag
P_Low_Battery BOOL A402.04 Work Low Battery Flag
P_LT BOOL CF007 Work Less Than (LT) Flag
P_Max_Cycle_Time UDINT A262 Work Maximum Cycle Time
P_N BOOL CF008 Work Negative (N) Flag
P_NE BOOL CF001 Work Not Equals (NE) Flag
P_OF BOOL CF009 Work Overflow (OF) Flag
P_Off BOOL CF114 Work Always OFF Flag
P_On BOOL CF113 Work Always ON Flag
P_Output_Off_Bit BOOL A500.15 Work Output OFF Bit
P_Step BOOL A200.12 Work Step Flag
P_UF BOOL CF010 Work Underflow (UF) Flag
TEMP_CH_02 CHANNEL W42 Work This is a temp symbol for converting ...
<<<<<<< Program File convert log >>>>>>>
Source step:5 Converted step:5
<<<<<<< Comment File converter log >>>>>>>
Converted TEMP_CH_02 to W42.
Compile Find Report Transfer
For Help, press F1
NewPLC1(Net:0,Node:0) - Offline
rung 0 (0, 0) - 100%
Smart
NUM

Fig. 5-8 insert the temporary variable

5.2. Copy Program from STEP 7 MicroWIN of Siemens

S7-200 series PLC of Siemens can be selected as the copy source.

(1) Open the program needed to be converted by STEP 7 MicroWIN of Siemens.

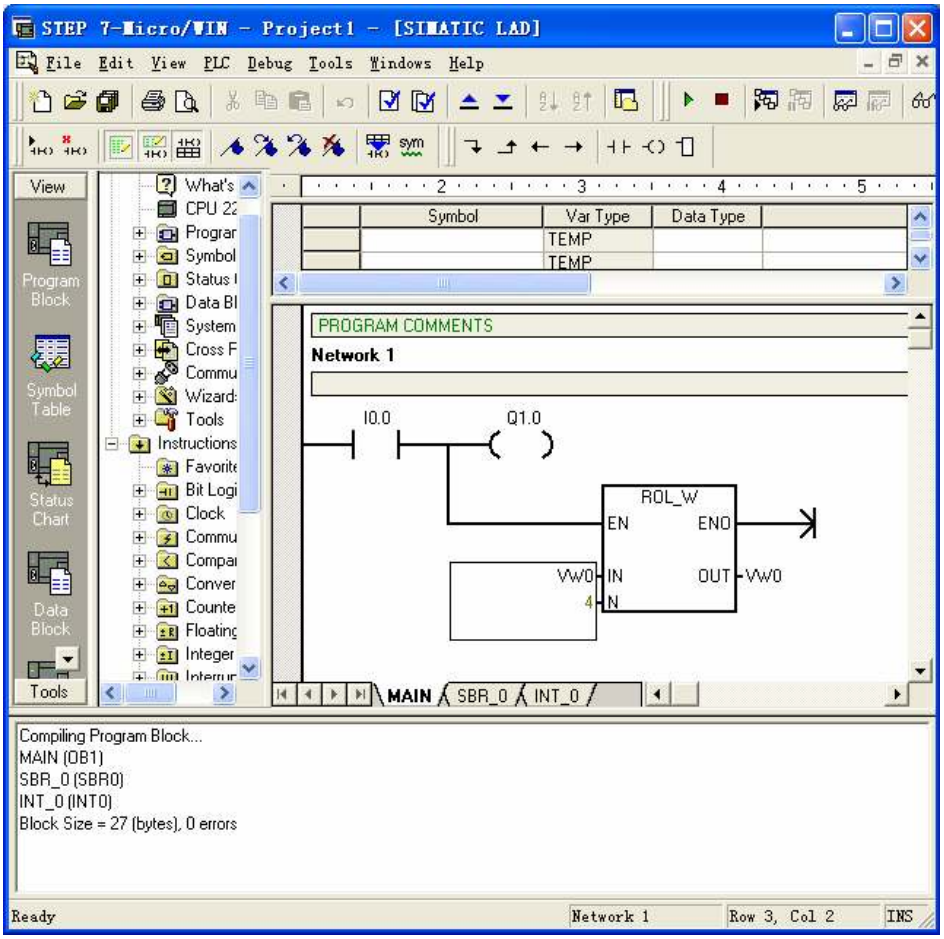


Fig.5-9 STEP 7 MicroWIN of Siemens

(2) Convert Siemens SIMATIC to International Symbol

When STEP 7 MicroWIN is started, click ***Tools*** menu or right button, select ***Options***, the "Options" screen is displayed.

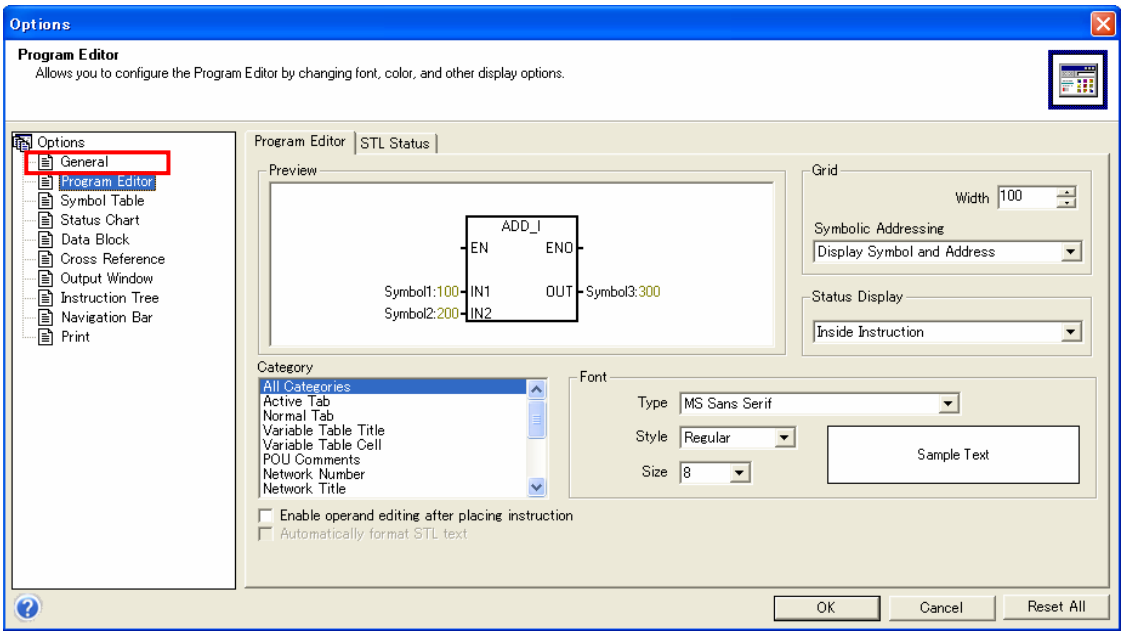


Fig.5-10 "Options" Screen of Siemens

Select ***General*** in the left tree menu and ***International*** in the item of ***Mnemonic Set***.

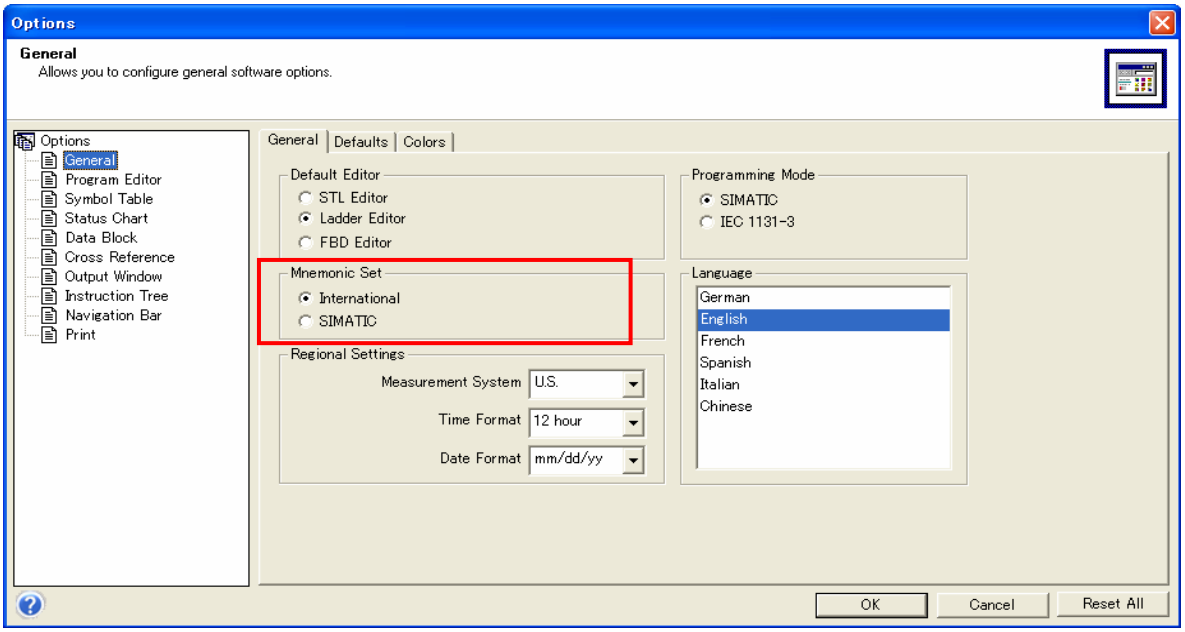


Fig.5-11 "General" Screen of Siemens

(3) Select ***view – STL***. View the program in STL mode (Mnemonic list).

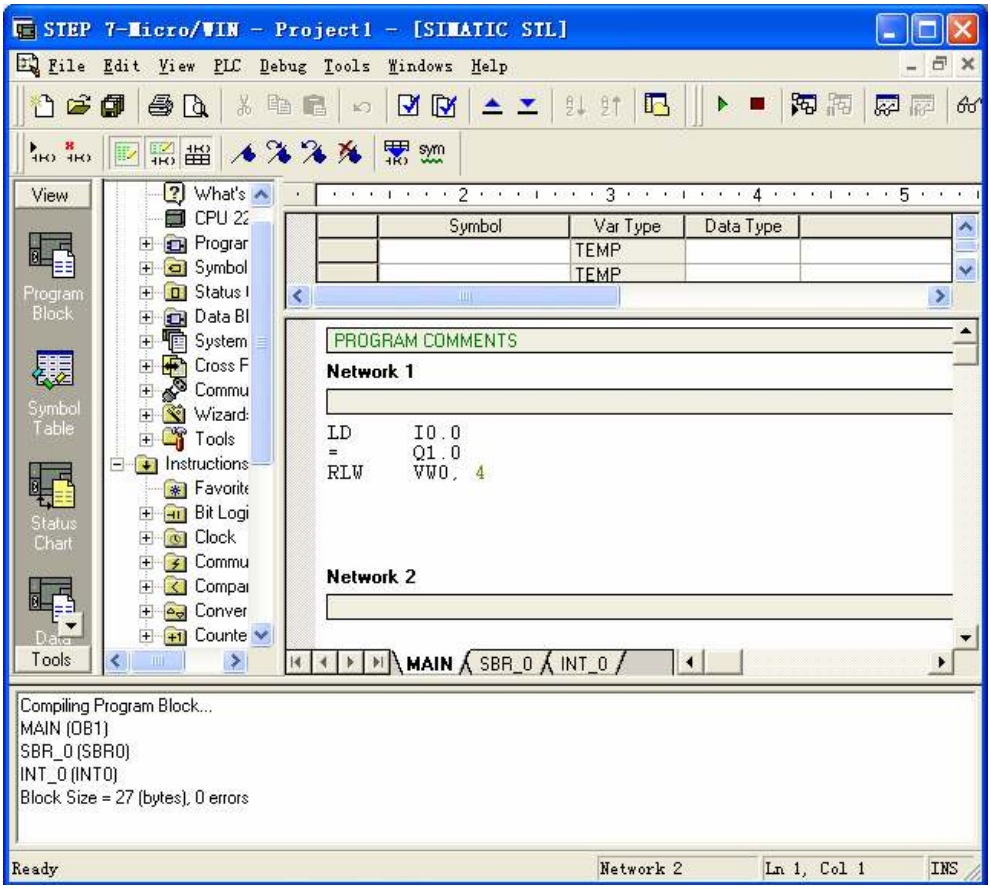


Fig. 5-12 Siemens Instruction （Mnemonic） list View

(4) Select the program needed to be converted.

Note: It has to start from Network1, and the minimum copy unit is one Network.

(5) Start up CX-Programmer and create a new project.

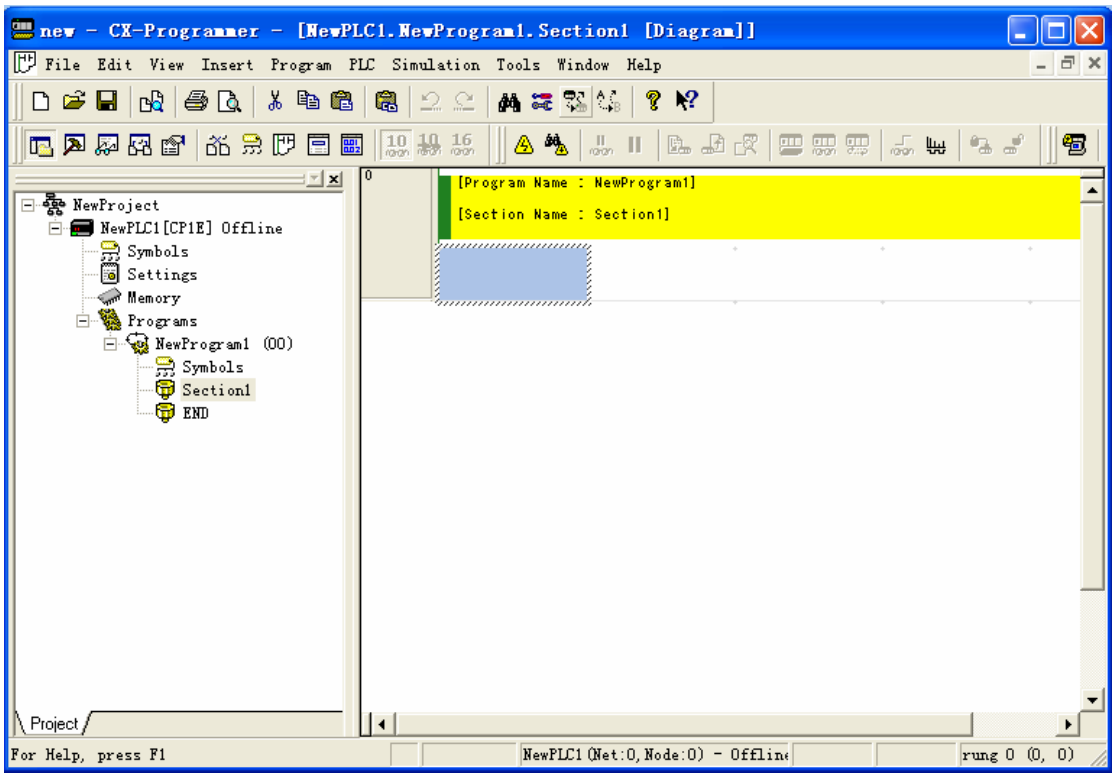


Fig. 5-13 OMRON CX-Programmer

(6) Paste the source program in the Diagram view or Mnemonics view. And the in following dialogue box will be displayed.

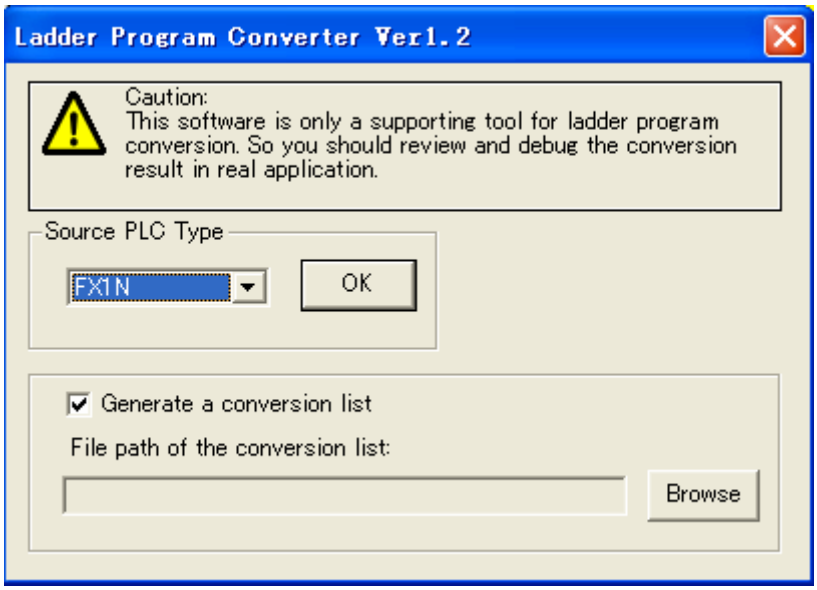

Ladder Program Converter Ver1.2
Caution:
This software is only a supporting tool for ladder program conversion. So you should review and debug the conversion result in real application.
Source PLC Type
FX1N
OK
Generate a conversion list
File path of the conversion list:
Browse

Fig. 5-14 Ladder Conversion Dialogue box

(7) Click the ***Browse*** Button; Designate the name and path of conversion list file.

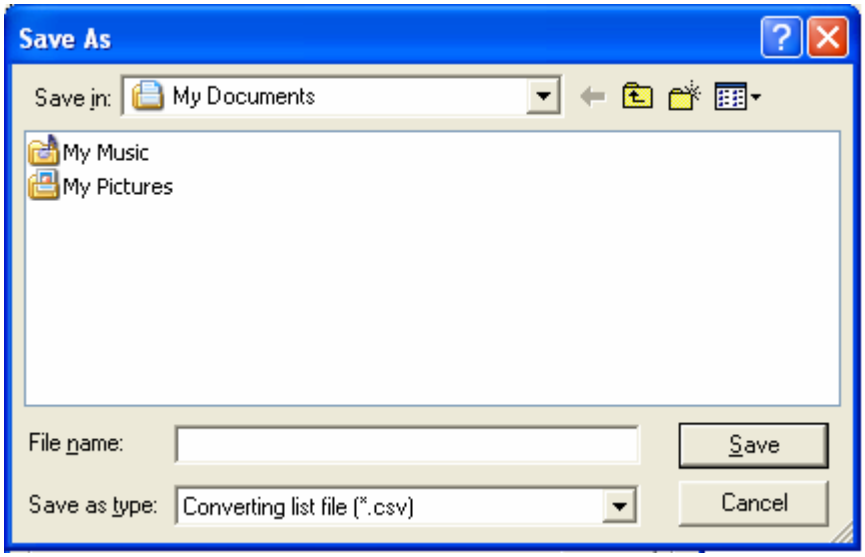


Fig.5-15 conversion list file selection Dialogue box

(8) Select the conversion destination PLC type. Click the ***OK*** Button and the Converting progress bar will be displayed.

Fig. 5-16 Converting Progress Bar

(9) The converted program will be displayed in the CX-Programmer. Corresponding converter information will display in the output window.If the conversion list file designated in step 6, the conversion results will be output to this file.

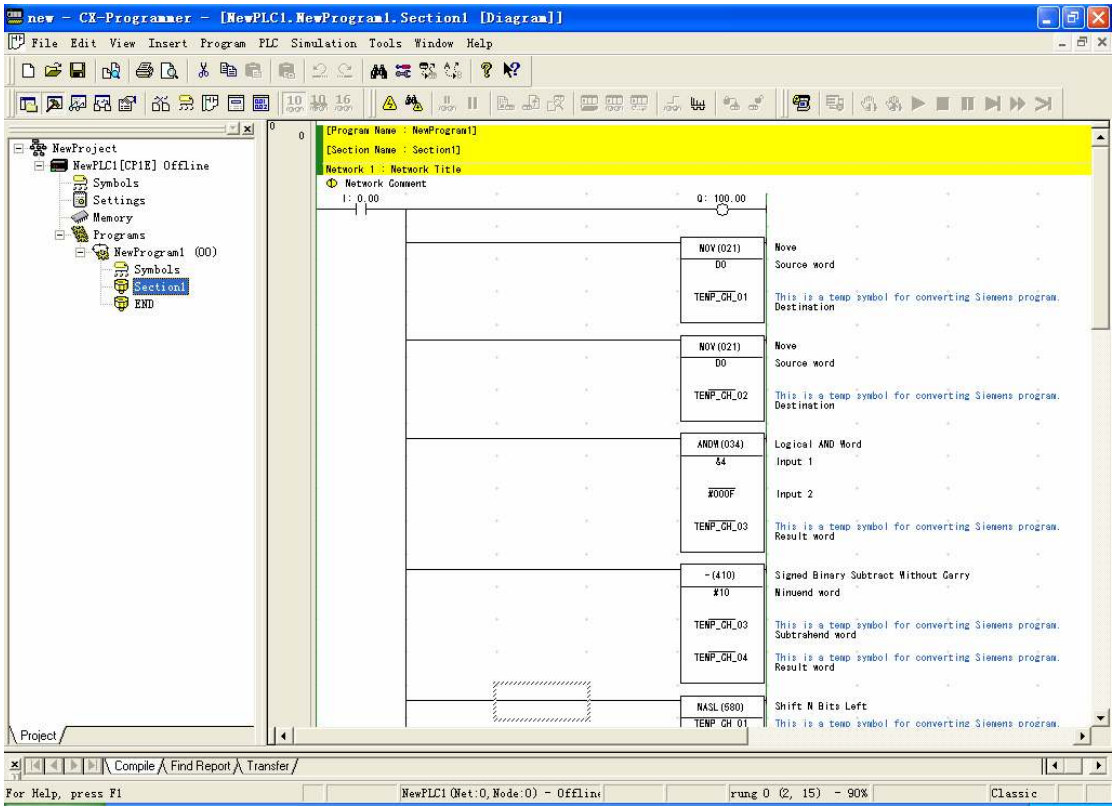


Fig. 5-17 the result of conversion

(10)Insert the temporary variables created during the conversion into the global variable table.

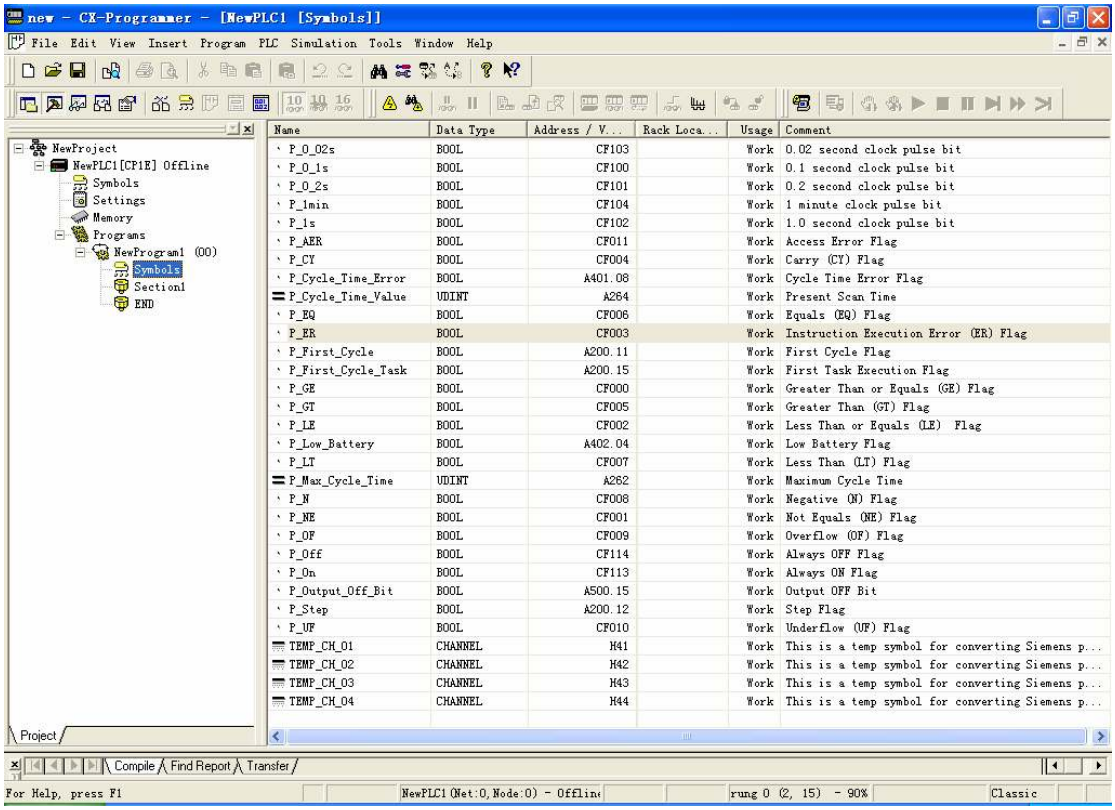

new - CX-Programmer - [NewPLC1 [Symbols]]
File Edit View Insert Program PLC Simulation Tools Window Help
NewProject
NewPLC1[CP1E] Offline
Symbols
Settings
Memory
Programs
NewProgram1 (00)
Symbols
Section1
END
Project
Name Data Type Address / V... Rack Loca... Usage Comment
P_0_02s BOOL CF103 Work 0.02 second clock pulse bit
P_0_1s BOOL CF100 Work 0.1 second clock pulse bit
P_0_2s BOOL CF101 Work 0.2 second clock pulse bit
P_1min BOOL CF104 Work 1 minute clock pulse bit
P_1s BOOL CF102 Work 1.0 second clock pulse bit
P_AER BOOL CF011 Work Access Error Flag
P_CY BOOL CF004 Work Carry (CY) Flag
P_Cycle_Time_Error BOOL A401.08 Work Cycle Time Error Flag
P_Cycle_Time_Value UDINT A264 Work Present Scan Time
P_EQ BOOL CF006 Work Equals (EQ) Flag
P_ER BOOL CF003 Work Instruction Execution Error (ER) Flag
P_First_Cycle BOOL A200.11 Work First Cycle Flag
P_First_Cycle_Task BOOL A200.15 Work First Task Execution Flag
P_GE BOOL CF000 Work Greater Than or Equals (GE) Flag
P_GT BOOL CF005 Work Greater Than (GT) Flag
P_LE BOOL CF002 Work Less Than or Equals (LE) Flag
P_Low_Battery BOOL A402.04 Work Low Battery Flag
P_LT BOOL CF007 Work Less Than (LT) Flag
P_Max_Cycle_Time UDINT A262 Work Maximum Cycle Time
P_N BOOL CF008 Work Negative (N) Flag
P_NE BOOL CF001 Work Not Equals (NE) Flag
P_OF BOOL CF009 Work Overflow (OF) Flag
P_Off BOOL CF114 Work Always OFF Flag
P_On BOOL CF113 Work Always ON Flag
P_Output_Off_Bit BOOL A500.15 Work Output OFF Bit
P_Step BOOL A200.12 Work Step Flag
P_UF BOOL CF010 Work Underflow (UF) Flag
TEMP_CH_01 CHANNEL H41 Work This is a temp symbol for converting Siemens p...
TEMP_CH_02 CHANNEL H42 Work This is a temp symbol for converting Siemens p...
TEMP_CH_03 CHANNEL H43 Work This is a temp symbol for converting Siemens p...
TEMP_CH_04 CHANNEL H44 Work This is a temp symbol for converting Siemens p...
Compile Find Report Transfer
For Help, press F1
NewPLC1(Net:0,Node:0) - Offlin
rung 0 (2, 15) - 90%
Classic

Fig. 5-18 Insert temporary variable

5.3. Conversion List File

Conversion List File is the instruction list before and after the conversion. It is a CSV file.

(1) Conversion List File specification

6 columns:

1) Conversion Source Step (Step No. for Mitsubishi instruction, NetWork No. for Siemens instruction)
2) Conversion Source Instruction
3) Conversion Source Operand
4) Conversion Destination Step
5) Conversion Destination Instruction
6) Conversion Destination Operand

When the conversion type is 1:N*[Note1], only the first OMRON instruction of conversion destination has the Step No.

When the instruction conversion error occurs, the instruction of conversion destination has not Step No.

When the operand conversion error occurs, the Step No. will be generated normally.

When converting the Mitsubishi program by the COPY-PASTE conversion method, the content of CSV file first column (Conversion Source Step) is not the Step No. in GX-D but the Instruction Quantity No.

***Note 1:**

One source instruction is converted to more than one destination instruction or one source instruction being converted to one destination instruction with different number and order of operands

(2) Open the CSV File in Excel

When Opening the CSV file in Excel, please pay attention to the following items:

1) When the operand of OMRON instruction is bool type and the decimal fraction part is 0, the decimal fraction part will be lost. For example 0.00 will be displayed as 0.
2) The +L、-L、++L and --L instruction of OMRON will be displayed as “#NAME？”. Please modify it manually.
3) The +、-、++ and -- instruction of OMRON in excel will be as maths symbols .Please modify it manually.
4) Please edit the CSV file in *Notepad*, not in Excel.

(3) Conversion Example

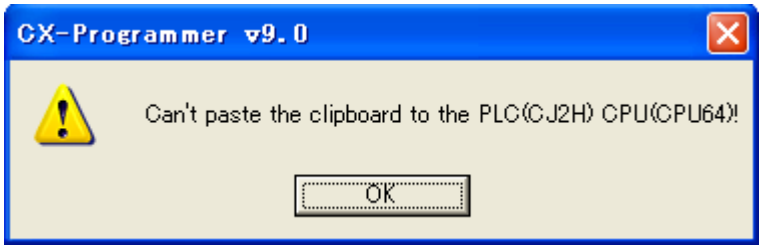
Example of Mitsubishi:

SrcStep	SrcInst	SrcMem	DstStep	DstInst	DstMem
0	LD	X000	0	LD	0.00
1	BIN	T0	1	BIN（023）	T0
		T1	(No Step number)		T1
6	LD	X001	2	LD	0.01
7	REF	X000	(No Step number)	MI_REF	X000
		K0	(No Step number)		K0
12	END		3	END	

Example of Siemens:

SrcStep	SrcInst	SrcMem	DstStep	DstInst	DstMem
NetWork 1	LD	I0.0	0	LD	0.00
NetWork 1	MOVW	VW0	1	MOV（021）	D0
		VW2	(No Step number)		D2
NetWork 2	LD	I0.1	2	LD	0.01
NetWork 2	STR	VB0	(No Step number)	SI_STR	VB0
		VB1	(No Step number)		VB1
		VB2	(No Step number)		VB2
END ORGANIZATION BLOCK	ENDP		3	END	

6. ERROR List and Solutions

Error List	Solutions
	Choose the "*Generated a conversion list"* and click the "**OK**" button when the path and name of conversion list file is not designated. The warning will be displayed.
	If the converter destination PLC type is not supported, the warning dialog box will display.

7. Appendix

7.1. Instruction Convert list

Conversion status：

○: Complete conversion　△: Incomplete conversion (Restrict Condition)

×: No conversion　●: Corresponding Mitsubish PLC

(1) Mitsubishi PLC Instruction Convert List

(Note: Specific conversion information, refer to Appendix: Mitsubishi Convert Specification)

No.	Instruction	Function	Class	Fx 3	Fx 2	Fx 1N	Fx 1S	Convert Status	Remark
1	LD	Load	Contact Instruction	●	●	●	●	○	
2	LDI	Load Inverse	Contact Instruction	●	●	●	●	○	
3	LDP	Load Pulse	Contact Instruction	●	●	●	●	○	
4	LDF	Load Falling Pulse	Contact Instruction	●	●	●	●	○	
5	AND	And	Contact Instruction	●	●	●	●	○	
6	ANI	And Inverse	Contact Instruction	●	●	●	●	○	
7	ANDP	And Pulse	Contact Instruction	●	●	●	●	○	
8	ANDF	And Falling Pulse	Contact Instruction	●	●	●	●	○	
9	OR	Or	Contact Instruction	●	●	●	●	○	
10	ORI	Or Inverse	Contact Instruction	●	●	●	●	○	
11	ORP	Or Pulse	Contact Instruction	●	●	●	●	○	
12	ORF	Or Falling Pulse	Contact Instruction	●	●	●	●	○	
13	ANB	And Block	Contact Instruction	●	●	●	●	○	
14	ORB	Or Block	Contact Instruction	●	●	●	●	○	
15	MPS	Memory Point Store	Contact Instruction	●	●	●	●	○	
16	MRD	Memory Read	Contact Instruction	●	●	●	●	○	
17	MPP	Memory POP	Contact Instruction	●	●	●	●	○	
18	INV	Inverse	Contact Instruction	●	●	●	●	○	
19	MEF	MEF	Contact Instruction	●				○	
20	MEP	MEP	Contact Instruction	●				○	
21	OUT	Out	Out Instruction	●	●	●	●	○	
22	OUT [C]	Out	Out Instruction	●	●	●	●	○	
23	OUT [T]	Out	Out Instruction	●	●	●	●	○	
24	SET	Set	Out Instruction	●	●	●	●	○	
25	RST	Reset	Out Instruction	●	●	●	●	○	
26	PLS	Pulse	Out Instruction	●	●	●	●	○	
27	PLF	Falling pulse	Out Instruction	●	●	●	●	○	
28	MC	Master Control	Master Control Instruction	●	●	●	●	○	
29	MCR	Master control reset	Master Control Instruction	●	●	●	●	○	
30	NOP	No Operation	Other Instruction	●	●	●	●	○	
31	END	End	End Instruction	●	●	●	●	○	
32	STL	Step Ladder	Step Ladder Instruction	●	●	●	●	×	
33	RET	Return	Step Ladder Instruction	●	●	●	●	×	
34	CJ	Conditional jump	Program Flow	●	●	●	●	○	
35	CJP	Conditional jump	Program Flow	●	●	●	●	○	
36	CALL	Call Subroutine	Program Flow	●	●	●	●	○	
37	CALLP	Call Subroutine	Program Flow	●	●	●	●	○	
38	SRET	Subroutine Return	Program Flow	●	●	●	●	○	
39	IRET	Interrupt Return	Program Flow	●	●	●	●	×	
40	EI	Enable Iinterrupt	Program Flow	●	●	●	●	○	
41	DI	Disable Interrupt	Program Flow	●	●	●	●	○	
42	FEND	Main Routine Program End	Program Flow	●	●	●	●	○	
43	WDT	Watchdog Timer Refresh	Program Flow	●	●	●	●	○	
44	WDTP	Watchdog Timer Refresh	Program Flow	●	●	●	●	○	

No.	Instruction	Function	Class	Fx 3	Fx 2	Fx 1N	Fx 1S	Convert Status	Remark
45	FOR	Start of a For/Next loop	Program Flow	●	●	●	●	△	Operand includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.
46	NEXT	End a For/Next loop	Program Flow	●	●	●	●	○	
47	CMP	Compare	Move and Compare	●	●	●	●	△	Operand includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.
48	CMPP	Compare	Move and Compare	●	●	●	●	△	Operand includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.
49	DCMP	Compare	Move and Compare	●	●	●	●	△	Operand includes KZ、KXZ、KYZ、KSZ、KMZ、TZ、CZ NO conversion.
50	DCMPP	Compare	Move and Compare	●	●	●	●	△	Operand includes KZ、KXZ、KYZ、KSZ、KMZ、TZ、CZ NO conversion.
51	ZCP	Zone Compare	Move and Compare	●	●	●	●	△	Operand includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.
52	ZCPP	Zone Compare	Move and Compare	●	●	●	●	△	Operand includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.
53	DZCP	Zone Compare	Move and Compare	●	●	●	●	△	Operand includes KZ、KXZ、KYZ、KSZ、KMZ、TZ、CZ NO conversion.
54	DZCPP	Zone Compare	Move and Compare	●	●	●	●	△	Operand includes KZ、KXZ、KYZ、KSZ、KMZ、TZ、CZ NO conversion.
55	MOV	Move	Move and Compare	●	●	●	●	△	Operand includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.
56	MOVP	Move	Move and Compare	●	●	●	●	△	Operand includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.
57	DMOV	Move	Move and Compare	●	●	●	●	△	Operand includes KZ、KXZ、KYZ、KSZ、KMZ、TZ、CZ NO conversion.
58	DMOVP	Move	Move and Compare	●	●	●	●	△	Operand includes KZ、KXZ、KYZ、KSZ、KMZ、TZ、CZ NO conversion.
59	SMOV	Shift Move	Move and Compare	●	●			×	
60	SMOVP	Shift Move	Move and Compare	●	●			×	
61	CML	Complement	Move and Compare	●	●			○	
62	CMLP	Complement	Move and Compare	●	●			○	
63	DCML	Complement	Move and Compare	●	●			△	To CP1E.No Conversion.
64	DCMLP	Complement	Move and Compare	●	●			△	To CP1E.No Conversion.
65	BMOV	Block Move	Move and Compare	●	●	●	●	△	Operand includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.
66	BMOVP	Block Move	Move and Compare	●	●	●	●	△	Operand includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.
67	FMOV	Fill Move	Move and Compare	●	●			×	
68	FMOVP	Fill Move	Move and Compare	●	●			×	
69	DFMOV	Fill Move	Move and Compare	●	●			×	
70	DFMOVP	Fill Move	Move and Compare	●	●			×	
71	XCH	Exchange	Move and Compare	●	●			○	
72	XCHP	Exchange	Move and Compare	●	●			○	

No.	Instruction	Function	Class	Fx 3	Fx 2	Fx 1N	Fx 1S	Convert Status	Remark
73	DXCH	Exchange	Move and Compare	●	●			△	To CP1E.No Conversion.
74	DXCHP	Exchange	Move and Compare	●	●			△	To CP1E.No Conversion.
75	BCD	Conversion to Binary Coded Decimal	Move and Compare	●	●	●	●	△	Operand includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.
76	BCDP	Conversion to Binary Coded Decimal	Move and Compare	●	●	●	●	△	Operand includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.
77	DBCD	Conversion to Binary Coded Decimal	Move and Compare	●	●	●	●	△	Operand includes KZ、KXZ、KYZ、KSZ、KMZ、TZ、CZ. NO conversion.
78	DBCDP	Conversion to Binary Coded Decimal	Move and Compare	●	●	●	●	△	Operand includes KZ、KXZ、KYZ、KSZ、KMZ、TZ、CZ. NO conversion.
79	BIN	Conversion to Binary	Move and Compare	●	●	●	●	△	Operand includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.
80	BINP	Conversion to Binary	Move and Compare	●	●	●	●	△	Operand includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.
81	DBIN	Conversion to Binary	Move and Compare	●	●	●	●	△	Operand includes KZ、KXZ、KYZ、KSZ、KMZ、TZ、CZ. NO conversion.
82	DBINP	Conversion to Binary	Move and Compare	●	●	●	●	△	Operand includes KZ、KXZ、KYZ、KSZ、KMZ、TZ、CZ. NO conversion.
83	ADD	Addition	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.
84	ADDP	Addition	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.
85	DADD	Addition	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KXZ、KYZ、KSZ、KMZ、TZ、CZ. NO conversion.
86	DADDP	Addition	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KXZ、KYZ、KSZ、KMZ、TZ、CZ. NO conversion.
87	SUB	Subtraction	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.
88	SUBP	Subtraction	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.
89	DSUB	Subtraction	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KXZ、KYZ、KSZ、KMZ、TZ、CZ. NO conversion.
90	DSUBP	Subtraction	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KXZ、KYZ、KSZ、KMZ、TZ、CZ. NO conversion.
91	MUL	Multiplication	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.
92	MULP	Multiplication	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.

No.	Instruction	Function	Class	Fx 3	Fx 2	Fx 1N	Fx 1S	Convert Status	Remark
93	DMUL	Multiplication	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KXZ、KYZ、KSZ、KMZ、TZ、CZ. NO conversion.
94	DMULP	Multiplication	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KXZ、KYZ、KSZ、KMZ、TZ、CZ. NO conversion.
95	DIV	Division	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.
96	DIVP	Division	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.
97	DDIV	Division	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KXZ、KYZ、KSZ、KMZ、TZ、CZ. NO conversion.
98	DDIVP	Division	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KXZ、KYZ、KSZ、KMZ、TZ、CZ. NO conversion.
99	INC	Increment	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KXZ、KYZ、KSZ、KMZ、TZ、CZ. NO conversion.
100	INCP	Increment	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KXZ、KYZ、KSZ、KMZ、TZ、CZ. NO conversion.
101	DINC	Increment	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KYZ、KSZ、KMZ、TZ、CZ. NO conversion.
102	DINCP	Increment	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KYZ、KSZ、KMZ、TZ、CZ. NO conversion.
103	DEC	Decrement	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KXZ、KYZ、KSZ、KMZ、TZ、CZ. NO conversion.
104	DECP	Decrement	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KXZ、KYZ、KSZ、KMZ、TZ、CZ. NO conversion.
105	DDEC	Decrement	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KYZ、KSZ、KMZ、TZ、CZ. NO conversion.
106	DDECP	Decrement	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KYZ、KSZ、KMZ、TZ、CZ. NO conversion.
107	WAND	Logical Word AND	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.
108	WANDP	Logical Word AND	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.
109	DAND	Logical Word AND	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KXZ、KYZ、KSZ、KMZ、TZ、CZ. NO conversion.
110	DANDP	Logical Word AND	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KXZ、KYZ、KSZ、KMZ、TZ、CZ. NO conversion.
111	WOR	Logical Word OR	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.
112	WORP	Logical Word OR	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.

No.	Instruction	Function	Class	Fx 3	Fx 2	Fx 1N	Fx 1S	Convert Status	Remark
113	DOR	Logical Word OR	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KXZ、KYZ、KSZ、KMZ、TZ、CZ. NO conversion.
114	DORP	Logical Word OR	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KXZ、KYZ、KSZ、KMZ、TZ、CZ. NO conversion.
115	WXOR	Logical Exclusive OR	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.
116	WXORP	Logical Exclusive OR	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.
117	DXOR	Logical Exclusive OR	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KXZ、KYZ、KSZ、KMZ、TZ、CZ. NO conversion.
118	DXORP	Logical Exclusive OR	Arithmetic and Logical operations	●	●	●	●	△	Operand includes KZ、KXZ、KYZ、KSZ、KMZ、TZ、CZ. NO conversion.
119	NEG	Negation	Arithmetic and Logical operations	●	●			△	Operand includes address out of converter range and KY、KM、KS、TV、TZ、CV、CZ、DV、DZ、KYZ、KSZ、KMZ. NO conversion.
120	NEGP	Negation	Arithmetic and Logical operations	●	●			△	Operand includes address out of converter range and KY、KM、KS、TV、TZ、CV、CZ、DV、DZ、KYZ、KSZ、KMZ. NO conversion.
121	DNEG	Negation	Arithmetic and Logical operations	●	●			△	Operand includes address out of converter range and KY、KM、KS、TV、TZ、CV、CZ、DV、DZ、KYZ、KSZ、KMZ. NO conversion. To CP1E. NO conversion.
122	DNEGP	Negation	Arithmetic and Logical operations	●	●			△	Operand includes address out of converter range and KY、KM、KS、TV、TZ、CV、CZ、DV、DZ、KYZ、KSZ、KMZ. NO conversion. To CP1E. NO conversion.
123	ROR	Rotation Right	Rotation and Shift Operation	●	●			×	
124	RORP	Rotation Right	Rotation and Shift Operation	●	●			×	
125	DROR	Rotation Right	Rotation and Shift Operation	●	●			×	
126	DRORP	Rotation Right	Rotation and Shift Operation	●	●			×	
127	ROL	Rotation Left	Rotation and Shift Operation	●	●			×	
128	ROLP	Rotation Left	Rotation and Shift Operation	●	●			×	
129	DROL	Rotation Left	Rotation and Shift Operation	●	●			×	
130	DROLP	Rotation Left	Rotation and Shift Operation	●	●			×	
131	RCR	Rotation Right with Carry	Rotation and Shift Operation	●	●			×	
132	RCRP	Rotation Right with Carry	Rotation and Shift Operation	●	●			×	
133	DRCR	Rotation Right with Carry	Rotation and Shift Operation	●	●			×	

No.	Instruction	Function	Class	Fx 3	Fx 2	Fx 1N	Fx 1S	Convert Status	Remark
134	DRCRP	Rotation Right with Carry	Rotation and Shift Operation	●	●			×	
135	RCL	Rotation Left with Carry	Rotation and Shift Operation	●	●			×	
136	RCLP	Rotation Left with Carry	Rotation and Shift Operation	●	●			×	
137	DRCL	Rotation Left with Carry	Rotation and Shift Operation	●	●			×	
138	DRCLP	Rotation Left with Carry	Rotation and Shift Operation	●	●			×	
139	SFTL	Bit Shift Left	Rotation and Shift Operation	●	●	●	●	△	
140	SFTLP	Bit Shift Left	Rotation and Shift Operation	●	●	●	●	△	
141	SFTR	Bit Shift Right	Rotation and Shift Operation	●	●	●	●	△	
142	SFTRP	Bit Shift Right	Rotation and Shift Operation	●	●	●	●	△	
143	WSFR	Word Shift Right	Rotation and Shift Operation	●	●			×	
144	WSFRP	Word Shift Right	Rotation and Shift Operation	●	●			×	
145	WSFL	Word Shift Left	Rotation and Shift Operation	●	●			×	
146	WSFLP	Word Shift Left	Rotation and Shift Operation	●	●			×	
147	SFWR	Shift write [FIFO/FILO control]	Rotation and Shift	●	●	●	●	△	Operand 1 includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion. Operand 2 isn't T、C、D. NO conversion.
148	SFWRP	Shift write [FIFO/FILO control]	Rotation and Shift	●	●	●	●	△	Operand 1 includes KZ、KV、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion. Operand 2 isn't T、C、D. NO conversion.
149	SFRD	Shift Read [FIFO Control]	Rotation and Shift	●	●	●	●	△	Operand 1 isn't T、C、D. NO conversion. Operand 2 isn't T、C、D、V、Z、DV、DZ. NO conversion.
150	SFRDP	Shift Read [FIFO Control]	Rotation and Shift	●	●	●	●	△	Operand 1 isn't T、C、D. NO conversion. Operand 2 isn't T、C、D、V、Z、DV、DZ. NO conversion.
151	ZRST	Zone Reset	Data Operation	●	●	●	●	△	Operand includes TZ, TV, CZ, CV. NO conversion.
152	ZRSTP	Zone Reset	Data Operation	●	●	●	●	△	Operand includes TZ, TV, CZ, CV. NO conversion.
153	DECO	Decode	Data Operation	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.
154	DECOP	Decode	Data Operation	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV. NO conversion.
155	ENCO	Encode	Data Operation	●	●	●	●	△	Operand 1 isn't T、C、D、V、Z、DZ、DV. NO conversion. Operand 2 isn't T、C、D、V、Z、DV、DZ. NO conversion.

No.	Instruction	Function	Class	Fx 3	Fx 2	Fx 1N	Fx 1S	Convert Status	Remark
156	ENCOP	Encode	Data Operation	●	●	●	●	△	Operand 1 isn't T、C、D、V、Z、DZ、DV. NO conversion. Operand 2 isn't T、C、D、V、Z、DV、DZ. NO conversion.
157	SUM	Sum of Active Bits	Data Operation	●	●			×	
158	SUMP	Sum of Active Bits	Data Operation	●	●			×	
159	DSUM	Sum of Active Bits	Data Operation	●	●			×	
160	DSUMP	Sum of Active Bits	Data Operation	●	●			×	
161	BON	Check Specified Bit Stauts	Data Operation	●	●			×	
162	BONP	Check Specified Bit Stauts	Data Operation	●	●			×	
163	DBON	Check Specified Bit Stauts	Data Operation	●	●			×	
164	DBONP	Check Specified Bit Stauts	Data Operation	●	●			×	
165	MEAN	Mean	Data Operation	●	●			×	
166	MEANP	Mean	Data Operation	●	●			×	
167	DMEAN	Mean	Data Operation	●	●			×	
168	DMEANP	Mean	Data Operation	●	●			×	
169	ANS	(Timed)Annunciator Set	Data Operation	●	●			×	
170	ANR	Annunciator Reset	Data Operation	●	●			×	
171	ANRP	Annunciator Reset	Data Operation	●	●			×	
172	SQR	Square Root	Data Operation	●	●			×	
173	SQRP	Square Root	Data Operation	●	●			×	
174	DSQR	Square Root	Data Operation	●	●			△	To CP1E.No Conversion.
175	DSQRP	Square Root	Data Operation	●	●			△	To CP1E.No Conversion.
176	FLT	Conversion to Floating Point	Data Operation	●	●			○	
177	FLTP	Conversion to Floating Point	Data Operation	●	●			○	
178	DFLT	Conversion to Floating Point	Data Operation	●	●			○	
179	DFLTP	Conversion to Floating Point	Data Operation	●	●			○	
180	REF	Refresh	High Speed Processing	●	●	●	●	×	
181	REFP	Refresh	High Speed Processing	●	●	●	●	×	
182	REFF	Refresh and filter adjust	High Speed Processing	●	●	●	●	×	
183	REFFP	Refresh and filter adjust	High Speed Processing	●	●	●	●	×	
184	MTR	Input matrix	High Speed Processing	●	●	●	●	×	
185	DHSCR	High speed cunter reset	High Speed Processing	●	●	●	●	×	
186	DHSCS	High speed cunter set	High Speed Processing	●	●	●	●	×	
187	DHSZ	High speed zone compare	High Speed Processing	●	●			×	
188	SPD	Speed detection	High Speed Processing	●	●	●	●	×	
189	DSPD	Speed detection	High Speed Processing	●				×	
190	PLSY	Pulse Y output	High Speed Processing	●	●	●	●	×	
191	DPLSY	Pulse Y output	High Speed Processing	●	●	●	●	×	
192	PWM	Pulse width modulation	High Speed Processing	●	●	●	●	×	
193	PLSR	Ramp Pulse output	High Speed Processing	●	●	●	●	×	
194	DPLSR	Ramp Pulse output	High Speed Processing	●	●	●	●	×	

No.	Instruction	Function	Class	Fx 3	Fx 2	Fx 1N	Fx 1S	Convert Status	Remark
195	IST	Initial State	Handy Instructions	●	●	●	●	×	
196	SER	Search	Handy Instructions	●	●			×	
197	SERP	Search	Handy Instructions	●	●			×	
198	DSER	Search	Handy Instructions	●	●			×	
199	DSERP	Search	Handy Instructions	●	●			×	
200	ABSD	Absolute Drum	Handy Instructions	●	●	●	●	×	
201	DABSD	Absolute Drum	Handy Instructions	●	●	●	●	×	
202	INCD	Incremental Drum	Handy Instructions	●	●	●	●	×	
203	TTMR	Teaching Timer	Handy Instructions	●	●			×	
204	STMR	Special Timer - Definable	Handy Instructions	●	●			×	
205	ALT	Altermate State	Handy Instructions	●	●	●	●	×	
206	ALTP	Altermate State	Handy Instructions	●	●	●	●	×	
207	RAMP	Ramp-Variable Value	Handy Instructions	●	●	●	●	×	
208	ROTC	Rotart Table Control	Handy Instructions	●	●			×	
209	SORT	Sort Data	Handy Instructions	●	●			×	
210	TKY	Ten Key Input	External FX I/O Devices	●	●			×	
211	DTKY	Ten Key Input	External FX I/O Devices	●	●			×	
212	HKY	Hexadecimal Input	External FX I/O Devices	●	●			×	
213	DHKY	Hexadecimal Input	External FX I/O Devices	●	●			×	
214	DSW	Digital Switch	External FX I/O Devices	●	●	●	●	×	
215	SEGD	Seven Segment Decoder	External FX I/O Devices	●	●			×	
216	SEGDP	Seven Segment Decoder	External FX I/O Devices	●	●			×	
217	SEGL	Seven Segment With Latch	External FX I/O Devices	●	●	●	●	×	
218	ARWS	Arrow Switch	External FX I/O Devices	●	●			×	
219	ASC	ASCII Code	External FX I/O Devices	●	●			×	
220	PR	Print' To A Display	External FX I/O Devices	●	●			×	
221	FROM	Read From A Special Function Block	External FX I/O Devices	●	●	●		×	
222	FROMP	Read From A Special Function Block	External FX I/O Devices	●	●	●		×	
223	DFROM	Read From A Special Function Block	External FX I/O Devices	●	●	●		×	
224	DFROMP	Read From A Special Function Block	External FX I/O Devices	●	●	●		×	
225	TO	Write To A Special Function Block	External FX I/O Devices	●	●	●		×	
226	TOP	Write To A Special Function Block	External FX I/O Devices	●	●	●		×	
227	DTO	Write To A Special Function Block	External FX I/O Devices	●	●	●		×	
228	DTOP	Write To A Special Function Block	External FX I/O Devices	●	●	●		×	
229	RS	RS Communications	External FX Serial Devices	●	●	●	●	×	
230	PRUN	Parallel run	External FX Serial Devices	●	●	●	●	×	
231	PRUNP	Parallel run	External FX Serial Devices	●	●	●	●	×	
232	DPRUN	Parallel run	External FX Serial Devices	●	●	●	●	×	

No.	Instruction	Function	Class	Fx 3	Fx 2	Fx 1N	Fx 1S	Convert Status	Remark
233	DPRUNP	Parallel run	External FX Serial Devices	●	●	●	●	×	
234	ASCI	HEX to ASCII	External FX Serial Devices	●	●	●	●	×	
235	ASCIP	HEX to ASCII	External FX Serial Devices	●	●	●	●	×	
236	HEX	ASCII to HEX	External FX Serial Devices	●	●	●	●	×	
237	HEXP	ASCII to HEX	External FX Serial Devices	●	●	●	●	×	
238	CCD	Check Code	External FX Serial Devices	●	●	●	●	×	
239	CCDP	Check Code	External FX Serial Devices	●	●	●	●	×	
240	VRRD	Volume Read	External FX Serial Devices	●	●	●	●	×	
241	VRRDP	Volume Read	External FX Serial Devices	●	●	●	●	×	
242	VRSC	Volume Scale	External FX Serial Devices	●	●	●	●	×	
243	VRSCP	Volume Scale	External FX Serial Devices	●	●	●	●	×	
244	RS2	Serial Communication 2	External FX Serial Devices	●				×	
245	PID	PID Control Loop	External FX Serial Devices	●	●	●		×	
246	ANRD	Analog Read	Special Module Instruction		●			×	
247	ANRDP	Analog Read	Special Module Instruction		●			×	
248	ANWR	Analog Write	Special Module Instruction		●			×	
249	ANWRP	Analog Write	Special Module Instruction		●			×	
250	BLK	BLOCK	Special Module Instruction		●			×	
251	BLKP	BLOCK	Special Module Instruction		●			×	
252	MCDE	Machine Code	Special Module Instruction		●			×	
253	MCDEP	Machine Code	Special Module Instruction		●			×	
254	MNET	Mini Net	Special Module Instruction		●			×	
255	MNETP	Mini Net	Special Module Instruction		●			×	
256	RMMN	RM Monitor	Special Module Instruction		●			×	
257	RMMNP	RM Monitor	Special Module Instruction		●			×	
258	RMRD	RM Read	Special Module Instruction		●			×	
259	RMRDP	RM Read	Special Module Instruction		●			×	
260	RMST	RM Start	Special Module Instruction		●			×	
261	RMWR	RM Write	Special Module Instruction		●			×	
262	RMWRP	RM Write	Special Module Instruction		●			×	
263	ZPUSH	Batch Store of Index Register	Data Transfer 2	●				×	
264	ZPUSHP	Batch Store of Index Register	Data Transfer 2	●				×	
265	ZPOP	Batch POP of Index Register	Data Transfer 2	●				×	
266	ZPOPP	Batch POP of Index Register	Data Transfer 2	●				×	

No.	Instruction	Function	Class	Fx 3	Fx 2	Fx 1N	Fx 1S	Convert Status	Remark
267	DECMP	Floating Point Compare	Floating Point	●	●			×	
268	DECMPP	Floating Point Compare	Floating Point	●	●			×	
269	DEZCP	Floating Point Zone Compare	Floating Point	●	●			×	
270	DEZCPP	Floating Point Zone Compare	Floating Point	●	●			×	
271	DEMOV	Floating Point Move	Floating Point	●				○	
272	DEMOVP	Floating Point Move	Floating Point	●				○	
273	DESTR	Floating Point to Character String Conversion	Floating Point	●				×	
274	DESTRP	Floating Point to Character String Conversion	Floating Point	●				×	
275	DEVAL	Character String to Floating Point Conversion	Floating Point	●				○	
276	DEVALP	Character String to Floating Point Conversion	Floating Point	●				○	
277	DEBCD	Floating Point to Scientific	Floating Point	●	●			×	
278	DEBCDP	Floating Point to Scientific	Floating Point	●	●			×	
279	DEBIN	Scientific to Floating Point	Floating Point	●	●			×	
280	DEBINP	Scientific to Floating Point	Floating Point	●	●			×	
281	DEADD	Floating Point Add	Floating Point	●	●			○	
282	DEADDP	Floating Point Add	Floating Point	●	●			○	
283	DESUB	Floating Point Subtract	Floating Point	●	●			○	
284	DESUBP	Floating Point Subtract	Floating Point	●	●			○	
285	DEMUL	Floating Point Multiplication	Floating Point	●	●			○	
286	DEMULP	Floating Point Multiplication	Floating Point	●	●			○	
287	DEDIV	Floating Point Division	Floating Point	●	●			○	
288	DEDIVP	Floating Point Division	Floating Point	●	●			○	
289	DEXP	Floating Point Exponent	Floating Point	●				△	To CP1E.No Conversion.
290	DEXPP	Floating Point Exponent	Floating Point	●				△	To CP1E.No Conversion.
291	DLOGE	Floating Point Natural Logarithm	Floating Point	●				△	To CP1E.No Conversion.
292	DLOGEP	Floating Point Natural Logarithm	Floating Point	●				△	To CP1E.No Conversion.
293	DLOG10	Floating Point Common Logarithm	Floating Point	●				×	
294	DLOG10P	Floating Point Common Logarithm	Floating Point	●				×	
295	DESQR	Floating Point Square Root	Floating Point	●	●			△	To CP1E.No Conversion.
296	DESQRP	Floating Point Square Root	Floating Point	●	●			△	To CP1E.No Conversion.
297	DENEG	Floating Point Negation	Floating Point	●				×	
298	DENEGP	Floating Point Negation	Floating Point	●				×	
299	INT	Floating Point to Integer	Floating Point	●	●			○	

No.	Instruction	Function	Class	Fx 3	Fx 2	Fx 1N	Fx 1S	Convert Status	Remark
300	INTP	Floating Point to Integer	Floating Point	●	●			○	
301	DINT	Floating Point to Integer	Floating Point	●	●			○	
302	DINTP	Floating Point to Integer	Floating Point	●	●			○	
303	DSIN	Sine	Floating Point	●	●			△	To CP1E.No Conversion.
304	DSINP	Sine	Floating Point	●	●			△	To CP1E.No Conversion.
305	DCOS	Cosine	Floating Point	●	●			△	To CP1E.No Conversion.
306	DCOSP	Cosine	Floating Point	●	●			△	To CP1E.No Conversion.
307	DTAN	Tangent	Floating Point	●	●			△	To CP1E.No Conversion.
308	DTANP	Tangent	Floating Point	●	●			△	To CP1E.No Conversion.
309	DASIN	Floating Point Arc Sine	Floating Point	●				△	To CP1E.No Conversion.
310	DASINP	Floating Point Arc Sine	Floating Point	●				△	To CP1E.No Conversion.
311	DACOS	Floating Point Arc Cosine	Floating Point	●				△	To CP1E.No Conversion.
312	DACOSP	Floating Point Arc Cosine	Floating Point	●				△	To CP1E.No Conversion.
313	DATAN	Floating Point Arc Tangent	Floating Point	●				△	To CP1E.No Conversion.
314	DATANP	Floating Point Arc Tangent	Floating Point	●				△	To CP1E.No Conversion.
315	DRAD	Floating Point Degrees to Radians Conversion	Floating Point	●				△	To CP1E.No Conversion.
316	DRADP	Floating Point Degrees to Radians Conversion	Floating Point	●				△	To CP1E.No Conversion.
317	DDEG	Floating Point Radians to Degrees Conversion	Floating Point	●				△	To CP1E.No Conversion.
318	DDEGP	Floating Point Radians to Degrees Conversion	Floating Point	●				△	To CP1E.No Conversion.
319	WSUM	Sum of Word Data	Data Operation 2	●				×	
320	WSUMP	Sum of Word Data	Data Operation 2	●				×	
321	DWSUM	Sum of Word Data	Data Operation 2	●				×	
322	DWSUMP	Sum of Word Data	Data Operation 2	●				×	
323	WTOB	WORD to BYTE	Data Operation 2	●				×	
324	WTOBP	WORD to BYTE	Data Operation 2	●				×	
325	BTOW	BYTE to WORD	Data Operation 2	●				×	
326	BTOWP	BYTE to WORD	Data Operation 2	●				×	
327	UNI	4-bit Linking of Word Data	Data Operation 2	●				×	
328	UNIP	4-bit Linking of Word Data	Data Operation 2	●				×	
329	DIS	4-bit Grouping of Word Data	Data Operation 2	●				×	
330	DISP	4-bit Grouping of Word Data	Data Operation 2	●				×	
331	SWAP	Float to Scientific	Data Operation 2	●	●			△	Operand includes address out of converter range and KY、KM、KS、TV、TZ、CV、CZ、DV、DZ、KYZ、KSZ、KMZ. NO conversion.
332	SWAPP	Float to Scientific	Data Operation 2	●	●			△	Operand includes address out of converter range and KY、KM、KS、TV、TZ、CV、CZ、DV、DZ、KYZ、KSZ、KMZ. NO conversion.

No.	Instruction	Function	Class	Fx 3	Fx 2	Fx 1N	Fx 1S	Convert Status	Remark
333	DSWAP	Float to Scientific	Data Operation 2	●	●			△	Operand includes address out of converter range and KY、KM、KS、TV、TZ、CV、CZ、DV、DZ、KYZ、KSZ、KMZ. NO conversion.
334	DSWAPP	Float to Scientific	Data Operation 2	●	●			△	Operand includes address out of converter range and KY、KM、KS、TV、TZ、CV、CZ、DV、DZ、KYZ、KSZ、KMZ. NO conversion.
335	SORT2	Sort Tabulated Data 2	Data Operation 2	●				×	
336	DSORT2	Sort Tabulated Data 2	Data Operation 2	●				×	
337	DSZR	DOG Search Zero Return	Positioning Control	●				×	
338	DVIT	Interrupt Positioning	Positioning Control	●				×	
339	DDVIT	Interrupt Positioning	Positioning Control	●				×	
340	DTBL	Batch Data Positioning Mode	Positioning Control	●				×	
341	DABS	Absolute current value read	Positioning Control	●	●	●	●	×	
342	ZRN	Zero return	Positioning Control	●	●	●	●	×	
343	DZRN	Zero return	Positioning Control	●	●	●	●	×	
344	PLSV	Pulse V	Positioning Control	●	●	●	●	×	
345	DPLSV	Pulse V	Positioning Control	●	●	●	●	×	
346	DRVI	Drive to increment	Positioning Control	●	●	●	●	×	
347	DDRVI	Drive to increment	Positioning Control	●	●	●	●	×	
348	DDRVA	Drive to absolute	Positioning Control	●	●	●	●	×	
349	DRVA	Drive to absolute	Positioning Control	●	●	●	●	×	
350	TCMP	Time Compare	Real Time clock Control	●	●	●	●	×	
351	TCMPP	Time Compare	Real Time clock Control	●	●	●	●	×	
352	TZCP	Time Zone Compare	Real Time clock Control	●	●	●	●	×	
353	TZCPP	Time Zone Compare	Real Time clock Control	●	●	●	●	×	
354	TADD	Time Add	Real Time clock Control	●	●	●	●	×	
355	TADDP	Time Add	Real Time clock Control	●	●	●	●	×	
356	TSUB	Time Subtract	Real Time clock Control	●	●	●	●	×	
357	TSUBP	Time Subtract	Real Time clock Control	●	●	●	●	×	
358	HTOS	Hour to second conversion	Real Time clock Control	●				×	
359	HTOSP	Hour to second conversion	Real Time clock Control	●				×	
360	DHTOS	Hour to second conversion	Real Time clock Control	●				×	
361	DHTOSP	Hour to second conversion	Real Time clock Control	●				×	
362	STOH	Second to hour conversion	Real Time clock Control	●				×	
363	STOHP	Second to hour conversion	Real Time clock Control	●				×	
364	DSTOH	Second to hour conversion	Real Time clock Control	●				×	
365	DSTOHP	Second to hour conversion	Real Time clock Control	●				×	
366	TRD	Read RTC data	Real Time clock Control	●	●	●	●	×	

No.	Instruction	Function	Class	Fx 3	Fx 2	Fx 1N	Fx 1S	Convert Status	Remark
367	TRDP	Read RTC data	Real Time clock Control	●	●	●	●	×	
368	TWR	Set RTC data	Real Time clock Control	●	●	●	●	×	
369	TWRP	Set RTC data	Real Time clock Control	●	●	●	●	×	
370	DHOUR	Hour meter	Real Time clock Control	●	●	●	●	×	
371	HOUR	Hour meter	Real Time clock Control	●	●	●	●	×	
372	GRY	Decimal to Gray Code	Gray Codes	●	●			×	
373	GRYP	Decimal to Gray Code	Gray Codes	●	●			×	
374	DGRY	Decimal to Gray Code	Gray Codes	●	●			×	
375	DGRYP	Decimal to Gray Code	Gray Codes	●	●			×	
376	GBIN	Gray Code to Decimal	Gray Codes	●	●			×	
377	GBINP	Gray Code to Decimal	Gray Codes	●	●			×	
378	DGBIN	Gray Code to Decimal	Gray Codes	●	●			×	
379	DGBINP	Gray Code to Decimal	Gray Codes	●	●			×	
380	RD3A	Read form Dedicated Analog Block	External Device	●	●	●		×	
381	RD3AP	Read form Dedicated Analog Block	External Device	●	●	●		×	
382	WR3A	Write to Dedicated Analog Block	External Device	●	●	●		×	
383	WR3AP	Write to Dedicated Analog Block	External Device	●	●	●		×	
384	EXTR	External ROM Function	Extension Function	●	●			×	
385	EXTRP	External ROM Function	Extension Function	●	●			×	
386	DEXTR	External ROM Function	Extension Function	●	●			×	
387	DEXTRP	External ROM Function	Extension Function	●	●			×	
388	COMRD	Read Device Comment Data	Others	●				×	
389	COMRDP	Read Device Comment Data	Others	●				×	
390	RND	Random Number Generation	Others	●				×	
391	RNDP	Random Number Generation	Others	●				×	
392	DUTY	Timing Pulse Generation	Others	●				×	
393	CRC	Cyclic Redundancy Check	Others	●				×	
394	CRCP	Cyclic Redundancy Check	Others	●				×	
395	DHCMOV	High Speed Counter Move	Others	●				×	
396	ADPRW	Adapter	Others	●				×	
397	BK+	Block Data Addition	Block Data Operation	●				×	
398	BK+P	Block Data Addition	Block Data Operation	●				×	
399	DBK+	Block Data Addition	Block Data Operation	●				×	
400	DBK+P	Block Data Addition	Block Data Operation	●				×	
401	BK-	Block Data Subtraction	Block Data Operation	●				×	

No.	Instruction	Function	Class	Fx 3	Fx 2	Fx 1N	Fx 1S	Convert Status	Remark
402	BK-P	Block Data Subtraction	Block Data Operation	●				×	
403	DBK-	Block Data Subtraction	Block Data Operation	●				×	
404	DBK-P	Block Data Subtraction	Block Data Operation	●				×	
405	BKCMP=	Block Data Compare S1=S2	Block Data Operation	●				×	
406	BKCMP=P	Block Data Compare S1=S2	Block Data Operation	●				×	
407	DBKCMP=	Block Data Compare S1=S2	Block Data Operation	●				×	
408	DBKCMP=P	Block Data Compare S1=S2	Block Data Operation	●				×	
409	BKCMP>	Block Data Compare S1>S2	Block Data Operation	●				×	
410	BKCMP>P	Block Data Compare S1>S2	Block Data Operation	●				×	
411	DBKCMP>	Block Data Compare S1>S2	Block Data Operation	●				×	
412	DBKCMP>P	Block Data Compare S1>S2	Block Data Operation	●				×	
413	BKCMP<	Block Data Compare S1<S2	Block Data Operation	●				×	
414	BKCMP<P	Block Data Compare S1<S2	Block Data Operation	●				×	
415	DBKCMP<	Block Data Compare S1<S2	Block Data Operation	●				×	
416	DBKCMP<P	Block Data Compare S1<S2	Block Data Operation	●				×	
417	BKCMP<>	Block Data Compare S1<>S2	Block Data Operation	●				×	
418	BKCMP<>P	Block Data Compare S1<>S2	Block Data Operation	●				×	
419	DBKCMP<>	Block Data Compare S1<>S2	Block Data Operation	●				×	
420	DBKCMP<>P	Block Data Compare S1<>S2	Block Data Operation	●				×	
421	BKCMP<=	Block Data Compare S1<=S2	Block Data Operation	●				×	
422	BKCMP<=P	Block Data Compare S1<=S2	Block Data Operation	●				×	
423	DBKCMP<=	Block Data Compare S1<=S2	Block Data Operation	●				×	
424	DBKCMP<=P	Block Data Compare S1<=S2	Block Data Operation	●				×	
425	BKCMP>=	Block Data Compare S1>=S2	Block Data Operation	●				×	
426	BKCMP>=P	Block Data Compare S1>=S2	Block Data Operation	●				×	
427	DBKCMP>=	Block Data Compare S1>=S2	Block Data Operation	●				×	
428	DBKCMP>=P	Block Data Compare S1>=S2	Block Data Operation	●				×	
429	STR	BIN to Character String Conversion	Character String Control	●				×	
430	STRP	BIN to Character String Conversion	Character String Control	●				×	
431	DSTR	BIN to Character String Conversion	Character String Control	●				×	
432	DSTRP	BIN to Character String Conversion	Character String Control	●				×	

No.	Instruction	Function	Class	Fx 3	Fx 2	Fx 1N	Fx 1S	Convert Status	Remark
433	VAL	Character String to BIN Conversion	Character String Control	●				×	
434	VALP	Character String to BIN Conversion	Character String Control	●				×	
435	DVAL	Character String to BIN Conversion	Character String Control	●				×	
436	DVALP	Character String to BIN Conversion	Character String Control	●				×	
437	$+	Link Character Strings	Character String Control	●				△	To CP1E.No Conversion.
438	$+P	Link Character Strings	Character String Control	●				△	To CP1E.No Conversion.
439	LEN	Character String Length Detection	Character String Control	●				△	To CP1E.No Conversion.
440	LENP	Character String Length Detection	Character String Control	●				△	To CP1E.No Conversion.
441	RIGHT	Extracting Character String Data from the Right	Character String Control	●				△	Operand includes address out of converter range and KX、KY、KM、KS、TV、TZ、CV、CZ、DV、DZ、KXZ、KYZ、KSZ、KMZ. NO conversion. To CP1E.No Conversion.
442	RIGHTP	Extracting Character String Data from the Right	Character String Control	●				△	Operand includes address out of converter range and KX、KY、KM、KS、TV、TZ、CV、CZ、DV、DZ、KXZ、KYZ、KSZ、KMZ. NO conversion. To CP1E.No Conversion.
443	LEFT	Extracting Character String Data from the Left	Character String Control	●				△	Operand includes address out of converter range and KX、KY、KM、KS、TV、TZ、CV、CZ、DV、DZ、KXZ、KYZ、KSZ、KMZ. NO conversion. To CP1E.No Conversion.
444	LEFTP	Extracting Character String Data from the Left	Character String Control	●				△	Operand includes address out of converter range and KX、KY、KM、KS、TV、TZ、CV、CZ、DV、DZ、KXZ、KYZ、KSZ、KMZ. NO conversion. To CP1E.No Conversion.
445	MIDR	Random Selection of Character Strings	Character String Control	●				×	
446	MIDRP	Random Selection of Character Strings	Character String Control	●				×	
447	MIDW	Random Replacement of Character Strings	Character String Control	●				×	
448	MIDWP	Random Replacement of Character Strings	Character String Control	●				×	
449	INSTR	Character string search	Character String Control	●				×	
450	INSTRP	Character string search	Character String Control	●				×	
451	$MOV	Character String Transfer	Character String Control	●				○	To CP1E.No Conversion.

No.	Instruction	Function	Class	Fx 3	Fx 2	Fx 1N	Fx 1S	Convert Status	Remark
452	$MOVP	Character String Transfer	Character String Control	●				○	To CP1E.No Conversion.
453	FDEL	Deleting Data from Tables	Data Operation 3	●				△	Operand includes address out of converter range and TV、TZ、CV、CZ、DV、DZ. NO conversion. To CP1E.No Conversion.
454	FDELP	Deleting Data from Tables	Data Operation 3	●				△	Operand includes address out of converter range and TV、TZ、CV、CZ、DV、DZ. NO conversion. To CP1E.No Conversion.
455	FINS	Inserting Data to Tables	Data Operation 3	●				△	Operand includes address out of converter range and TV、TZ、CV、CZ、DV、DZ. NO conversion. To CP1E.No Conversion.
456	FINSP	Inserting Data to Tables	Data Operation 3	●				△	Operand includes address out of converter range and TV、TZ、CV、CZ、DV、DZ.NO conversion. To CP1E.No Conversion.
457	POP	Shift Last Data Read FILO Control	Data Operation 3	●				×	
458	POPP	Shift Last Data Read FILO Control	Data Operation 3	●				×	
459	SFR	Bit Shift Right with Carry	Data Operation 3	●				○	
460	SFRP	Bit Shift Right with Carry	Data Operation 3	●				○	
461	SFL	Bit Shift Left with Carry	Data Operation 3	●				○	
462	SFLP	Bit Shift Left with Carry	Data Operation 3	●				○	
463	LD=	(S1)=(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
464	LDD=	(S1)=(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
465	LD>	(S1)>(S1)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
466	LD<	(S1)<(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
467	LDD>	(S1)>(S1)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
468	LDD<	(S1)<(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.

No.	Instruction	Function	Class	Fx 3	Fx 2	Fx 1N	Fx 1S	Convert Status	Remark
469	LD<>	(S1)≠(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
470	LDD<>	(S1)≠(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
471	LD<=	(S1)□(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
472	LDD<=	(S1)□(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
473	LD>=	(S1)□(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
474	LDD>=	(S1)□(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
475	AND=	(S1)=(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
476	ANDD=	(S1)=(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
477	AND>	(S1)>(S1)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
478	ANDD>	(S1)>(S1)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
479	AND<	(S1)<(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
480	ANDD<	(S1)<(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
481	AND<>	(S1)≠(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.

No.	Instruction	Function	Class	Fx 3	Fx 2	Fx 1N	Fx 1S	Convert Status	Remark
482	ANDD<>	(S1)≠(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
483	AND<=	(S1)□(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
484	ANDD<=	(S1)□(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
485	AND>=	(S1)□(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
486	ANDD>=	(S1)□(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
487	OR=	(S1)=(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
488	ORD=	(S1)=(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
489	OR>	(S1)>(S1)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
490	ORD>	(S1)>(S1)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
491	OR<	(S1)<(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
492	ORD<	(S1)<(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
493	OR<>	(S1)≠(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
494	ORD<>	(S1)≠(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.

No.	Instruction	Function	Class	Fx 3	Fx 2	Fx 1N	Fx 1S	Convert Status	Remark
495	OR<=	(S1)□(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
496	ORD<=	(S1)□(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
497	OR>=	(S1)□(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
498	ORD>=	(S1)□(S2)	Inline Comparisons	●	●	●	●	△	Operand includes KZ、KV、KX、KY、KS、KM、KXZ、KYZ、KSZ、KMZ、TZ、TV、CZ、CV、DZ、DV. NO conversion.
499	LIMIT	Limit Control	Data Table Operation	●				×	
500	LIMITP	Limit Control	Data Table Operation	●				×	
501	DLIMIT	Limit Control	Data Table Operation	●				×	
502	DLIMITP	Limit Control	Data Table Operation	●				×	
503	BAND	Dead Band Control	Data Table Operation	●				×	
504	BANDP	Dead Band Control	Data Table Operation	●				×	
505	DBAND	Dead Band Control	Data Table Operation	●				×	
506	DBANDP	Dead Band Control	Data Table Operation	●				×	
507	ZONE	Zone Control	Data Table Operation	●				×	
508	ZONEP	Zone Control	Data Table Operation	●				×	
509	DZONE	Zone Control	Data Table Operation	●				×	
510	DZONEP	Zone Control	Data Table Operation	●				×	
511	SCL	Scaling (Coordinate by Point Data)	Data Table Operation	●				×	
512	SCLP	Scaling (Coordinate by Point Data)	Data Table Operation	●				×	
513	DSCL	Scaling (Coordinate by Point Data)	Data Table Operation	●				×	
514	DSCLP	Scaling (Coordinate by Point Data)	Data Table Operation	●				×	
515	DABIN	Decimal ASCII to BIN Conversion	Data Table Operation	●				×	
516	DABINP	Decimal ASCII to BIN Conversion	Data Table Operation	●				×	
517	DDABIN	Decimal ASCII to BIN Conversion	Data Table Operation	●				×	
518	DDABINP	Decimal ASCII to BIN Conversion	Data Table Operation	●				×	
519	BINDA	BIN to Decimal ASCII Conversion	Data Table Operation	●				×	
520	BINDAP	BIN to Decimal ASCII Conversion	Data Table Operation	●				×	
521	DBINDA	BIN to Decimal ASCII Conversion	Data Table Operation	●				×	
522	DBINDAP	BIN to Decimal ASCII Conversion	Data Table Operation	●				×	

No.	Instruction	Function	Class	Fx 3	Fx 2	Fx 1N	Fx 1S	Convert Status	Remark
523	SCL2	Scaling 2 (Coordinate by X/Y Data)	Data Table Operation	●				×	
524	SCL2P	Scaling 2 (Coordinate by X/Y Data)	Data Table Operation	●				×	
525	DSCL2	Scaling 2 (Coordinate by X/Y Data)	Data Table Operation	●				×	
526	DSCL2P	Scaling 2 (Coordinate by X/Y Data)	Data Table Operation	●				×	
527	IVCK	Inverter Status Check	External Device Communication	●				×	
528	IVDR	Inverter Drive	External Device Communication	●				×	
529	IVRD	Inverter Parameter Read	External Device Communication	●				×	
530	IVWR	Inverter Parameter Write	External Device Communication	●				×	
531	IVBWR	Inverter Parameter Block Write	External Device Communication	●				×	
532	RBFM	Divided BFM Read	Data Transfer 3	●				×	
533	WBFM	Divided BFM Write	Data Transfer 3	●				×	
534	DHSCT	High Speed Counter Compare With Data Table	High Speed Processing 2	●				×	
535	LOADR	Load From ER	Extension File Register Control	●				×	
536	LOADRP	Load From ER	Extension File Register Control	●				×	
537	SAVER	Save to ER	Extension File Register Control	●				×	
538	INITR	Initialize R and ER	Extension File Register Control	●				×	
539	INITRP	Initialize R and ER	Extension File Register Control	●				×	
540	LOGR	Logging R and ER	Extension File Register Control	●				×	
541	LOGRP	Logging R and ER	Extension File Register Control	●				×	
542	RWER	Rewrite to ER	Extension File Register Control	●				×	
543	RWERP	Rewrite to ER	Extension File Register Control	●				×	
544	INITER	Initialize ER	Extension File Register Control	●				×	
545	INITERP	Initialize ER	Extension File Register Control	●				×	

(2) Siemens PLC Instruction Convert List

(Note: Specific conversion information, refer to Appendix: Siemens Convert Specification)

No.	Instruction (S7-200)	Class	Function	Convert Status	Remark
1	AENO	Bit Logic Instructions	And ENO	○	
2	LD	Bit Logic Instructions	Load	○	
3	LDN	Bit Logic Instructions	Load Not	○	
4	A	Bit Logic Instructions	And	○	
5	AN	Bit Logic Instructions	And Not	○	
6	O	Bit Logic Instructions	Or	○	
7	ON	Bit Logic Instructions	Or Not	○	
8	LDI	Bit Logic Instructions	Load immediate	○	
9	LDNI	Bit Logic Instructions	Load Not immediate	○	
10	AI	Bit Logic Instructions	And immediate	○	
11	ANI	Bit Logic Instructions	And Not immediate	○	
12	OI	Bit Logic Instructions	Or immediate	○	
13	ONI	Bit Logic Instructions	Or Not immediate	○	
14	ALD	Bit Logic Instructions	And Block	○	
15	OLD	Bit Logic Instructions	Or Block	○	
16	NOT	Bit Logic Instructions	Not	○	
17	EU	Bit Logic Instructions	Pulse	○	
18	ED	Bit Logic Instructions	Falling Pulse	○	
19	=	Bit Logic Instructions	Output	○	
20	=I	Bit Logic Instructions	Output immediate	○	
21	S	Bit Logic Instructions	Set	○	
22	R	Bit Logic Instructions	Reset	○	
23	SI	Bit Logic Instructions	Set immediate	×	
24	RI	Bit Logic Instructions	Reset immediate	×	
25	SR	Bit Logic Instructions	Set Dominant Bistable	○	
26	RS	Bit Logic Instructions	Reset Dominant Bistable instruction	×	
27	NOP	Bit Logic Instructions	Nop	×	
28	LDB=	Compare Instructions	Compare Load Byte N1=N2	○	
29	LDB<	Compare Instructions	Compare Load Byte N1<N2	○	
30	LDB>	Compare Instructions	Compare Load Byte N1>N2	○	
31	LDB<>	Compare Instructions	Compare Load Byte N1<>N2	○	
32	LDB<=	Compare Instructions	Compare Load Byte N1<=N2	○	
33	LDB>=	Compare Instructions	Compare Load Byte N1>=N2	○	
34	LDW=	Compare Instructions	Compare Load Word N1=N2	○	
35	LDW<	Compare Instructions	Compare Load Word N1<N2	○	
36	LDW>	Compare Instructions	Compare Load Word N1>N2	○	
37	LDW<>	Compare Instructions	Compare Load Word N1<>N2	○	
38	LDW<=	Compare Instructions	Compare Load Word N1<=N2	○	
39	LDW>=	Compare Instructions	Compare Load Word N1>=N2	○	
40	LDD=	Compare Instructions	Compare Load Double Word N1=N2	○	
41	LDD<	Compare Instructions	Compare Load Double Word N1<N2	○	
42	LDD>	Compare Instructions	Compare Load Double Word N1>N2	○	

No.	Instruction (S7-200)	Class	Function	Convert Status	Remark
43	LDD<>	Compare Instructions	Compare Load Double Word N1<>N2	○	
44	LDD<=	Compare Instructions	Compare Load Double Word N1<=N2	○	
45	LDD>=	Compare Instructions	Compare Load Double Word N1>=N2	○	
46	LDR=	Compare Instructions	Compare Load Real N1=N2	○	
47	LDR<	Compare Instructions	Compare Load Real N1<N2	○	
48	LDR>	Compare Instructions	Compare Load Real N1>N2	○	
49	LDR<>	Compare Instructions	Compare Load Real N1<>N2	○	
50	LDR<=	Compare Instructions	Compare Load Real N1<=N2	○	
51	LDR>=	Compare Instructions	Compare Load Real N1>=N2	○	
52	AB=	Compare Instructions	Compare And Byte N1=N2	○	
53	AB<	Compare Instructions	Compare And Byte N1<N2	○	
54	AB>	Compare Instructions	Compare And Byte N1>N2	○	
55	AB<>	Compare Instructions	Compare And Byte N1<>N2	○	
56	AB<=	Compare Instructions	Compare And Byte N1<=N2	○	
57	AB>=	Compare Instructions	Compare And Byte N1>=N2	○	
58	AW=	Compare Instructions	Compare And Word N1=N2	○	
59	AW<	Compare Instructions	Compare And Word N1<N2	○	
60	AW>	Compare Instructions	Compare And Word N1>N2	○	
61	AW<>	Compare Instructions	Compare And Word N1<>N2	○	
62	AW<=	Compare Instructions	Compare And Word N1<=N2	○	
63	AW>=	Compare Instructions	Compare And Word N1=>N2	○	
64	AD=	Compare Instructions	Compare And Double Word N1=N2	○	
65	AD<	Compare Instructions	Compare And Double Word N1<N2	○	
66	AD>	Compare Instructions	Compare And Double Word N1>N2	○	
67	AD<>	Compare Instructions	Compare And Double Word N1<>N2	○	
68	AD<=	Compare Instructions	Compare And Double Word N1<=N2	○	
69	AD>=	Compare Instructions	Compare And Double Word N1>=N2	○	
70	AR=	Compare Instructions	Compare And Real N1=N2	○	
71	AR<	Compare Instructions	Compare And Real N1<N2	○	
72	AR>	Compare Instructions	Compare And Real N1>N2	○	
73	AR<>	Compare Instructions	Compare And Real N1<>N2	○	
74	AR<=	Compare Instructions	Compare And Real N1<=N2	○	
75	AR>=	Compare Instructions	Compare And Real N1>=N2	○	
76	OB=	Compare Instructions	Compare Or Byte N1=N2	○	
77	OB<	Compare Instructions	Compare Or Byte N1<N2	○	
78	OB>	Compare Instructions	Compare Or Byte N1>N2	○	
79	OB<>	Compare Instructions	Compare Or Byte N1<>N2	○	
80	OB<=	Compare Instructions	Compare Or Byte N1<=N2	○	
81	OB>=	Compare Instructions	Compare Or Byte N1>=N2	○	
82	OW=	Compare Instructions	Compare Or Word N1=N2	○	
83	OW<	Compare Instructions	Compare Or Word N1<N2	○	
84	OW>	Compare Instructions	Compare Or Word N1>N2	○	

No.	Instruction (S7-200)	Class	Function	Convert Status	Remark
85	OW<>	Compare Instructions	Compare Or Word N1<>N2	○	
86	OW<=	Compare Instructions	Compare Or Word N1<=N2	○	
87	OW>=	Compare Instructions	Compare Or Word N1=>N2	○	
88	OD=	Compare Instructions	Compare Or Double Word N1=N2	○	
89	OD<	Compare Instructions	Compare Or Double Word N1<N2	○	
90	OD>	Compare Instructions	Compare Or Double Word N1>N2	○	
91	OD<>	Compare Instructions	Compare Or Double Word N1<>N2	○	
92	OD<=	Compare Instructions	Compare Or Double Word N1<=N2	○	
93	OD>=	Compare Instructions	Compare Or Double Word N1>=N2	○	
94	OR=	Compare Instructions	Compare Or Real N1=N2	○	
95	OR<	Compare Instructions	Compare Or Real N1<N2	○	
96	OR>	Compare Instructions	Compare Or Real N1>N2	○	
97	OR<>	Compare Instructions	Compare Or Real N1<>N2	○	
98	OR<=	Compare Instructions	Compare Or Real N1<=N2	○	
99	OR>=	Compare Instructions	Compare Or Real N1>=N2	○	
100	LDS=	Compare Instructions	Compare Load String IN1=IN2	×	
101	LDS<>	Compare Instructions	Compare Load String IN1<>IN2	×	
102	AS=	Compare Instructions	Compare And String IN1=IN2	×	
103	AS<>	Compare Instructions	Compare And String IN1<>IN2	×	
104	OS=	Compare Instructions	Compare Or String IN1=IN2	×	
105	OS<>	Compare Instructions	Compare Or String IN1<>IN2	×	
106	TON	Timer Instructions	On-Delay Timer	○	
107	TONR	Timer Instructions	Retentive On-Delay Timer	○	
108	TOF	Timer Instructions	Off-Delay Timer	×	
109	TP	Timer Instructions	Pulse Timer	×	
110	BGN_ITIME	Timer Instructions	Beginning Interval Time	×	
111	CAL_ITIME	Timer Instructions	Calculate Interval Time	×	
112	CTU	Counter Instructions	CU increments the current value	○	
113	CTUD	Counter Instructions	CU increments the current value CD decrements the current value	○	
114	CTD	Counter Instructions	CD decrements the current value	○	
115	ADD_I	Math Instructions	Add Integer IN1+OUT=OUT	○	
116	SUB_I	Math Instructions	Subtract Integer IN1-OUT=OUT	○	
117	ADD_DI	Math Instructions	Add double Integer IN1+OUT=OUT	○	
118	SUB_DI	Math Instructions	Subtract Integer IN1-OUT=OUT	○	
119	MUL_I	Math Instructions	Multiply Interger IN1*OUT=OUT	○	
120	DIV_I	Math Instructions	Divide Interger IN1/OUT=OUT	○	
121	MUL_DI	Math Instructions	Multiply Double Interger IN1*OUT=OUT	○	
122	DIV_DI	Math Instructions	Divide Double Interger IN1/OUT=OUT	○	
123	MUL	Math Instructions	Multiply Integer to Double Interger（16*16-》32）	○	
124	DIV	Math Instructions	Divide Interger（16/16-》32）	○	

No.	Instruction (S7-200)	Class	Function	Convert Status	Remark
125	INCB	Math Instructions	Bit Increment	○	
126	DECB	Math Instructions	Bit Decrement	○	
127	INCW	Math Instructions	Word Increment	○	
128	DECW	Math Instructions	Word Decrement	○	
129	INCD	Math Instructions	Double Word Increment	○	
130	DECD	Math Instructions	Double Word Decrement	○	
131	ADD_R	Real Math Instructions	Add Real IN1+OUT=OUT	○	
132	SUB_R	Real Math Instructions	Subtract Real IN1-OUT=OUT	○	
133	MUL_R	Real Math Instructions	Multiply Real IN1*OUT=OUT	○	
134	DIV_R	Real Math Instructions	Divide Real IN1/OUT=OUT	○	
135	SQRT	Real Math Instructions	Square Root	×	
136	LN	Real Math Instructions	Natural Logarithm	×	
137	EXP	Real Math Instructions	Natural Exponential	×	
138	SIN	Real Math Instructions	Sine	×	
139	COS	Real Math Instructions	Cosine	×	
140	TAN	Real Math Instructions	Tangent	×	
141	PID	Real Math Instructions	PID Loop	×	
142	MOV_B	Move Instructions	Move Byte	○	
143	MOV_W	Move Instructions	Move Word	○	
144	MOV_DW	Move Instructions	Move Double Word	○	
145	MOV_R	Move Instructions	Move Real	○	
146	BLKMOV_B	Move Instructions	Block Move Byte	×	
147	BLKMOV_W	Move Instructions	Block Move Word	○	
148	BLKMOV_D	Move Instructions	Block Move Double Word	○	
149	SWAP	Move Instructions	Conversion Byet	○	
150	MOV_BIR	Move Instructions	Move Byte Immediate Read	×	
151	MOV_BIW	Move Instructions	Move Byte Immediate Write	×	
152	WAND_B	Logical Operations Instructions	And Byte	○	
153	WOR_B	Logical Operations Instructions	Or Byte	○	
154	WXOR_B	Logical Operations Instructions	Exclusive Or Byet	○	
155	WAND_W	Logical Operations Instructions	And Word	○	
156	WOR_W	Logical Operations Instructions	Or Word	○	
157	WXOR_W	Logical Operations Instructions	Exclusive Or Word	○	
158	WAND_DW	Logical Operations Instructions	And Double Word	○	
159	WOR_DW	Logical Operations Instructions	Or Double Word	○	
160	WXOR_DW	Logical Operations Instructions	Exclusive Or Double Word	○	
161	INV_B	Logical Operations Instructions	Invert Byte	○	
162	INV_W	Logical Operations Instructions	Invert Word、	○	
163	INV_DW	Logical Operations Instructions	Invert Double Word	○	

No.	Instruction (S7-200)	Class	Function	Convert Status	Remark
164	SHR_B	Shift and Rotate Instructions	Shift Right Byte	×	
165	SHL_B	Shift and Rotate Instructions	Shift Left Byte	×	
166	SHR_W	Shift and Rotate Instructions	Shift Right Word	○	
167	SHL_W	Shift and Rotate Instructions	Shift Left Word	○	
168	SHR_DW	Shift and Rotate Instructions	Shift Right Double Word	○	
169	SHL_DW	Shift and Rotate Instructions	Shift Left Double Word	○	
170	ROR_B	Shift and Rotate Instructions	Rotate Right Byte	×	
171	ROL_B	Shift and Rotate Instructions	Rotate Left Byte	×	
172	ROR_W	Shift and Rotate Instructions	Rotate Right Word	○	
173	ROL_W	Shift and Rotate Instructions	Rotate Left Word	○	
174	ROR_DW	Shift and Rotate Instructions	Rotate Right Double Word	○	
175	ROL_DW	Shift and Rotate Instructions	Rotate Left Double Word	○	
176	SHRB	Shift and Rotate Instructions	Shift and Rotate Register	×	
177	BCD_I	Conversion Instructions	BCD to integer	○	
178	I_BCD	Conversion Instructions	Integer to BCD	○	
179	DI_R(DTR)	Conversion Instructions	Double Integer to Real	○	
180	ROUND	Conversion Instructions	Round	○	
181	TRUNC	Conversion Instructions	Truncate	○	
182	DI_I	Conversion Instructions	Double Integer to Integer	×	
183	I_DI	Conversion Instructions	Integer to Double Integer	○	
184	B_I	Conversion Instructions	Byte to Integer	×	
185	I_B	Conversion Instructions	Interger to byte	×	
186	DECO	Conversion Instructions	Decode	○	
187	ENCO	Conversion Instructions	Encode	○	
188	SEG	Conversion Instructions	Segment	○	
189	ATH	Conversion Instructions	ASCII to Hexadecimal	×	
190	HTA	Conversion Instructions	Hexadecimal to ASCII	×	
191	ITA	Conversion Instructions	Integer to ASCII	×	
192	DTA	Conversion Instructions	Double Integer to ASCII	×	
193	RTA	Conversion Instructions	Real to ASCII	×	
194	I_S	Conversion Instructions	Integer to String	×	

No.	Instruction (S7-200)	Class	Function	Convert Status	Remark
195	DI_S	Conversion Instructions	Double Integer to String	×	
196	R_S	Conversion Instructions	Real to String	○	
197	S_I	Conversion Instructions	String to Integer	×	
198	S_DI	Conversion Instructions	String to Double Integer	×	
199	S_R	Conversion Instructions	String to Real	○	
200	JMP	Program Control Instructions	Jump to Label	○	
201	LBL	Program Control Instructions	Label	○	
202	SBR	Program Control Instructions	Subroutine Start	○	
203	CRET	Program Control Instructions	Condutional Return from Subroutine	×	
204	FOR	Program Control Instructions	For/Next Loop	○	
205	NEXT	Program Control Instructions	For/Next Loop	○	
206	SCR	Program Control Instructions	Load SCR	○	
207	SCRT	Program Control Instructions	SCR Transition	○	
208	CSCRE	Program Control Instructions	Conditional SCR End	×	
209	SCRE	Program Control Instructions	SCR End	×	
210	CALL	Program Control Instructions	Call Subroutine	○	
211	FINAL	Program Control Instructions	FOR/NEXT loop number (Included in FOR when converted)	○	
212	END	Program Control Instructions	END	×	
213	DIAG_LED	Program Control Instructions	Diagnostic LED	×	
214	STOP	Program Control Instructions	Stop	×	
215	WDR	Program Control Instructions	Watchdot Reset（300ms）	×	
216	LPS	Logic Stack Instructions	Logic Push	○	
217	LRD	Logic Stack Instructions	Logic Read	○	
218	LPP	Logic Stack Instructions	Logic Pop	○	
219	LDS	Logic Stack Instructions	Load Stack	×	
220	HDEF	High-Speed Counter Instructions	High-Speed Counter Definition	×	
221	HSC	High-Speed Counter Instructions	High-Speed Counter	×	
222	PLS	High-Speed Counter Instructions	Pulse Output	×	
223	READ_RTC	Clock Instructions	Read-Time Clock	×	
224	SET_RTC	Clock Instructions	Set Read-Time Clock	×	
225	READ_RTCX	Clock Instructions	Read Real Time Clock Extended	×	

No.	Instruction (S7-200)	Class	Function	Convert Status	Remark
226	SET_RTCX	Clock Instructions	Set Real Time Clock Extended	×	
227	ATT	Table Instructions	Add to Table	×	
228	FND=	Table Instructions	Table Find	×	
229	FND<>	Table Instructions	Table Find	×	
230	FND<	Table Instructions	Table Find	×	
231	FND>	Table Instructions	Table Find	×	
232	FIFO	Table Instructions	First-In-First-Out	×	
233	LIFO	Table Instructions	Last-In-First-Out	×	
234	FILL	Table Instructions	Memory Fill	×	
235	ATCH	Interrupt Instructions	Attach Interrupt	×	
236	DTCH	Interrupt Instructions	Detach Interrupt	×	
237	CRETI	Interrupt Instructions	Conditional Return from Interrupt	×	
238	ENI	Interrupt Instructions	Enable Interrupt	×	
239	DISI	Interrupt Instructions	Disable Interrupt	×	
240	CEVNT	Interrupt Instructions	Clear Interrupt Event	×	
241	NETR	Communications Instructions	Network Read	×	
242	NETW	Communications Instructions	Network Write	×	
243	XMT	Communications Instructions	Transmit	×	
244	RCV	Communications Instructions	Receive	×	
245	GET_ADDR	Communications Instructions	Get Port Address	×	
246	SET_ADDR	Communications Instructions	Set Port Address	×	
247	STR_LEN	String Instructions	String Length	×	
248	STR_CPY	String Instructions	Copy String	×	
249	STR_CAT	String Instructions	Concatenate String	×	
250	SSTR_CPY	String Instructions	Copy Substring from String	×	
251	STR_FIND	String Instructions	Find String Within String	×	
252	CHR_FIND	String Instructions	Find First Character Within String	×	